The Dynamics of Alliance Knowledge Management: Synergistic Knowledge Sharing between International Airlines in Thailand

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PhD

2008

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The Dynamics of Alliance Knowledge Management: Synergistic Knowledge Sharing between International Airlines in Thailand

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A thesis submitted in partial fulfilment
of the requirements of the
Northumbria University
for the degree of
Doctor of Philosophy

Research undertaken in the
Newcastle Business School

November 2008

Abstract

The use of knowledge between organisations in alliance networks has been the critical source of collectively creating and sustaining core competences. The awareness of the possible dynamic factors that influence, support, and outline the sharing of knowledge between organisations is necessary for the management of knowledge. This study explores the issues of the dynamics in alliance knowledge management. The investigation is focused on the areas that alliance partners can learn, the ways they learn, and the ways the learning happens in order to understand the characteristics of the dynamics, their roles in alliance knowledge systems and relationships between them.

Relating to the research aim, the primary research investigates the case of knowledge sharing within airline alliance networks in Thailand. The investigation, which is based on the concept of social constructionism, employs muti-method research strategies. It is divided into three stages (qualitative, quantitative, and qualitative phases). From the three phases of the investigation, the empirical research has been done with participants from aviation related government organisations, the operational international airlines in Thailand, and the airline alliance networks in Thailand.

The main findings of the study highlight the critical values to the alliance, the utilised leadership styles and the structure of alliance knowledge flow as the distinct characteristics of learning within alliances. The developed framework of the alliance learning system explains the existences of the dynamics and their possible roles. Moreover, the elaborations from the respondents enable the author to configure the structures of airline alliance knowledge flow in Thailand. In terms of roles and relationships of the dynamics, the outcomes indicate the

critical dynamics frame and direct the knowledge interactions in alliance networks. These dynamics influence, screen and support other knowledge sharing factors such as individuals, the production of knowledge materials, and knowledge sharing channels. They are also challenged by other factors such as knowledge sharing reasons and stability, as well as the compatibility of the communication infrastructures between alliance partners. Besides, to synthesise the empirical evidence with Stonehouse and Pemberton (1999)' organisational learning framework, it shows that the natures of the critical dynamics are the main differences between intra and inter-organisational learning. Nevertheless, the results also suggest the similarities between intra and inter-organisational learning in terms of learning input and output factors, the formats of knowledge conversions in the learning process, and some characteristics of knowledge creation.

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Abbreviation

AIMS	=	Airport Information Management System
AOC	=	Airport Operation Centre
AODB	=	Airport Operations Databased
AKM	=	Alliance Knowledge Management
AKS	=	Alliance Knowledge System
ALS	=	Alliance Learning System
e-mail	=	Electronic Mail
ICTs	=	Information and Communication Technologies
KM	=	Knowledge Management
KMS	=	Knowledge Management System
R&V	=	Reliability and Validity

ACKNOWLEDGEMENTS

In retrospect, working hard on this PhD. project over the years, I have learned much more than I expected when I started. Overcoming many low moments has developed my views. Nonetheless, the success of this project is not only from my commitment but also from people who have encouraged me in one way or another. I want to take this opportunity to express my appreciation to them.

Firstly, I would like to express my gratefulness to my principal supervisor, Dr. Jon Pemberton. His advice, time devotion, help, and encouragement over the past years are vital for the completion of this project. My thankfulness and appreciation are also contributed to my coordinated supervisor, Dr. Tony Purdie, for his constructive suggestions and kind consultancy in developing this thesis.

I also want to express my warm thanks to my previous supervisors who helped me to develop this study, although they left before this thesis was completed: Dr. Larry Wilkinson, Dr. Colin Comb, and Professor George Stonehouse.

Sincere thanks must go to all respondents for participating in this study and also for further discussions in updating the investigated cases. Although I can not specify their names here due to the requirements of anonymity, their support is highly valued.

My acknowledgements are also for my family. Without my family, I could not be what I am today. I owe my father a lot as I have been far away from home and always busy trying to complete this research project. I did not have much chance to

look after him during his illness until he passed away. My deep gratitude goes to my aunties, Koo-Lek and Koo-Nargh, for all the good things that have ever happened to me. I would like to dedicate this work to them. Thank you for your insurmountable love, spiritual espousing, financial support, and other encouragement, all the time in every way throughout my life.

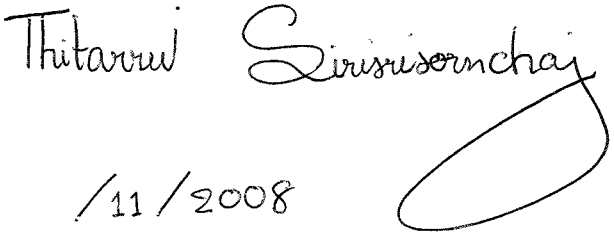
Special thanks are extended to my special person, Jeab, for listening to my story every day, for the trust, cheering me up and being with me through all the low moments. My heart has been refreshed by another kind of friendship and companionship from Little Gucci, a much loved staffie. Becky, Smith, Tanky, and Beaver are still in my mind as they were always waiting for me until their tails no longer wagged.

My appreciation also extends to many good friends. Many thanks are due to all friends in "Mad Max" for good times we had together and understanding. Thanks a lot to BU and other SJC friends for keeping in touch over long distances.

Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work.

Name : Thitarree Sirisrisornchai

Signature : 

Date : /11/2008

Section I: The Research Setting

This section contains three chapters giving the background of the study. Chapter 1 introduces the research, giving details regarding the experience and views that inspire the author to conduct this project, its aim and the research questions it intended to answer, as well as the distinctiveness of the study, and the thesis structure. Chapter 2 presents a review of the literature relevant to the subjects investigated (AKM and airline alliances). Chapter 3 explains the methodology used in the study, including the chosen methods of the investigation, their reliability and validity, and ethical issues.

Chapter 1

Introduction to the Research

"Knowledge is power."
Sir Francis Bacon (1597), Religious Meditations, Of Heresies.

1.1 Introduction

As the initial chapter of this thesis, this chapter provides an overview of the study including the background of the research, its aim, the research questions, the distinctiveness of the study, and the thesis structure. The background of the research highlights the main factors relevant to the decision to begin this project on the subject of alliance knowledge management (AKM). My experiences and the identified academic gaps provide the notion for setting the research aim and questions. The research aim sets the scope of the study, specifying the issues to be investigated concerning the dynamics of AKM. The investigation process as a consequence of the research questions was intended to identify alliance learning factors, their roles, and the relationships between them. The overall scope of the project is indicated in the section on the distinctiveness of the research, which introduces the different components of the research and the frameworks utilised in order to identify the distinctive characteristics of this study. Finally, Chapter 1 concludes with a description of organisation of the thesis and summaries of all of the chapters.

1.2 Research Background

The author was indoctrinated that "knowledge is the basis of all development". This notion, together with the aphorism by Sir Francis Bacon that "Knowledge is power", leads to deliberations concerning whether knowledge is intrinsically power or if knowledge is power only if it can be utilised to benefit its owner. The agreement on the latter perspective and realisation that knowledge enables development ability, leads the author to acquire more knowledge for self development to help other people. This is a simple principle that can be applied to business management because knowledge is also the basis of organisational development and brings power when it can be utilised to benefit the organisation. However, in business management, the higher the number of people and subgroups, the more variables and sophisticated issues arise concerning knowledge creation and circulation. If knowledge is power when it can benefit its owner, the importance of knowledge management in business is to create and improve ability.

Based on the author's experience in family businesses, identifying problems in management embrace the issue of knowledge management. These businesses very much relied on key individuals and lacked procedures for recording, retrieving, and circulating. Without transferring knowledge to others and formalising it to become organisational knowledge, the increase in skills from training and work experience has less potential to add value in the long term because it contributes to individual development without a yield to others. Various constraints may lead to relying on key individuals (such as a belief in securing status via the hoarding of knowledge, and personal relationships that blur job-task principles), but these should be viewed as

challenges in management rather than fixed barriers that must be conformed to. The case of our small tannery factories, for instance, conforms to the above mentioned management barriers creating a negative organisational culture that collectively resists the facilitation of knowledge flows. For example, when many skilled staff left at the same time, this caused a tremendous problem for management and production since the new employees held their own job tactics or lacked of skills. Moreover, the lack of understanding of factors relevant to managing knowledge curtails the capability to solve the challenges. In fact, all of these challenges are parts of the effects from the elements in the knowledge system. These experiences increase the interest of the author to investigate the possible dynamics in managing knowledge.

The initial impetus to conduct management research was from reflecting upon past experience in family businesses, work experience in a consultancy firm and a Master's dissertation that was relevant to some aspects of the airline industry, which led to an interest in knowledge management in the service sector. Moreover, curiosity concerning the extent and complexity of KM between organisations aroused an interest in knowledge sharing within alliances. Therefore, all these reasons supported the decision to study alliance knowledge management (AKM) by exploring the case of airline alliances and critiquing with KM frameworks.

In addition to the experiences described above, the scope of the investigation in this research project was also determined by gaps found to exist in knowledge management studies. Conceptually, organisational knowledge management is suggested to aim for a balance between three connected processes of knowledge management (KM) commitment (Davenport and Prusak, 2000; Hamel, Doz, and

Pahalad, 1989). They are creating individual ability, sustaining organisational competences, and building knowledge sharing opportunities. However, these processes are the conveyance of knowledge and need other factors to facilitate the sharing of knowledge. (Child, Faulkner, and Tallman, 2005; Bhatt, 1998)

The studies of Grieves, McMillan, Wilding (2006), and Stonehouse, Pemberton, and Barber (2001), lead to the understanding that it is important to identify the components of the KM system. Khamseh and Jolly (2008) add that factors in the knowledge system affect knowledge sharing and have varied effects on different circumstances. Hence, the factors as well as their roles are critical to characteristics in the knowledge system. Besides, to manage knowledge, the understanding of the factors and their roles will support the decision making process and the choices of management methods.

Furthermore, a number of theorists and practitioners have focused their approach into the second generation of knowledge management research which embraces more on human factors and social context (Swart and Kinnie, 2003; Koch, 2002; Dougherty, 1999; Kamoche, 1997). In the present socio-technical environment of knowledge management, there is no denying the usefulness of ICTs (Information and communication technologies) (Pemberton and Stonehouse, 2005). Nevertheless, individuals and their interactions have a critical role in KM because knowledge is inextricably bound up with human cognition and the management of knowledge occurs within an intricately structured social context (Grieves *et al*, 2006; Thomas, Kellogg, and Erickson, 2001).

Although many theorists and practitioners have increasingly realised the criticality of individuals and their social contexts in managing knowledge, the literature has gaps on aspects of dynamics of KM concerning individuals' knowledge interactions particularly in alliance and service sector. From studies on KM such those of Argyris (1977b) on learning loops, Stonehouse and Pemberton (1999) on the system of intelligent organisation, and Nonaka and Takeuchi (1995) and Polanyi (1966) on knowledge forms and conversion, most of the existing frameworks illustrate the characteristics of KM in the different point of views. Additionally, few focus on characteristic of alliance knowledge sharing, the differences of critical influencers between intra and inter-organisational learning which are relevant to the ways individuals share knowledge, and the relations between factors in sharing knowledge.

In terms of the literature regarding alliance networks, the traditional competitive approaches emphasise the benefits of collaboration for operative synergies (Bamford, Gomes-Casseres, and Robinson, 2003; Dussauge and Gamette, 1999; Vyas, Shelburn, and Rogers, 1995; De-Wit and Meyer, 1994; Contractor and Lorange1988). Although a number of studies have recognised the importance of learning within alliances (Cimon, 2004; Skyrme, 2003; Nielsen, 2002; Inkpen, 2000; Doz and Hamel, 1998; Morrison and Mezentseff, 1997), research into the issue is still at an early stage. Many issues such as the dynamics, their roles, and relationships between them require further study while many terms, such as the alliance learning system (ALS) and learning benefits, as well as the contents and dimensions of alliance learning, need further clarification.

1.3 Aim of Research

In order to fill some gaps in understanding within the KM field, this study investigates the dynamics of AKM. The main interest lies in understanding the issues regarding the management of knowledge between organisations. The investigation focuses on the dynamics of AKM- that is, the factors which affect the sharing of knowledge, roles of these factors, and their relationships in the alliance knowledge system.

The advantages of strategic alliances can benefit the collaborating organisations in both tangible and intangible ways. The issues of knowledge management are of crucial relevance to the competitive and operational success of both affiliated organisations and the alliance networks. In addition, the investigation in an industry where strategic alliances play a critical role in competition as the case of airline industry can then provide more accurate results.

Therefore, the overall aim of this research is to explore dynamics of knowledge management between organisations in competitive strategic alliances. The airline industry in Thailand is investigated as a case study and the results are expected to reduce the knowledge gap in the academic literature in this area as mentioned in the former section. More specifically, the collaborations of three major airline networks (Star Alliance, Oneworld, and Sky Team) in Thailand are the main investigated cases.

1.4 Research Questions

In order to accomplish the aim of exploring the dynamics of knowledge management between organisations in competitive strategic alliances which fill the gaps of knowledge as discussed, the investigation is designed to answer a set of research questions. These questions are:

- Q1: What can members of an alliance learn?

  - : *To identify the dynamics of AKM from the assigned collaborative projects, knowledge sharing activities, and the integration with managing knowledge where alliance members learn from each other.*

- Q2: How do they learn?

  -: *To trace the dynamics of AKM from an operational perspective by identifying the methods used to learn and tools in knowledge sharing.*

- Q3: How does the learning happen?

  -: *To configure work-process dynamics and the relationships between the dynamics in AKM that guide, influence, direct, support, and actuate the occurrence of the learning.*

The three research questions cover the main issues concerning the components of AKM dynamics in terms of the areas of the sharing of knowledge between organisations in the airline industry (Q1), the ways individuals share knowledge (Q2),

and the environments for knowledge sharing in Thai society including inhibitors and facilitators (Q3).

1.5 Definition of Terms

In this thesis, some critical terms are frequently employed in presenting the development of this study. These terms are required to describe the definitions and the scopes of employing them in the project. The descriptions are expected to reduce ambiguity in presenting the outcomes of the study.

Knowledge

Knowledge and information are stages of knowing that depend on the background knowledge, experience, and capability of receivers to link inputs with their existing justified beliefs (Bhatt, 2001; Stonehouse and Pemberton, 1999; Nonaka and Takeuchi, 1995). Then, the differences between knowledge and information depend on the internal processes of the receiver that might or might not be obvious to others (Li and Gao, 2003; Thomas *et al*, 2001; Dougherty, 1999). According to precepts, knowledge and information are forms of resources that can be contributed by partners to the group, from the group to partners, and between partners (Das and Kumar, 2007; Bhatt, 2001). The terms knowledge and information are sometimes interchangeably employed when they refer to content in knowledge and media to acknowledge the alliance members.

Intra and Inter-organisational Learning

The term "intra-organisational learning" presents the characteristics of learning within organisations. Therefore, in this study, it is the learning within each airline. The term "inter-organisational learning" indicates the characteristics of learning between organisations. In this thesis, it uses to describe the learning between airlines within alliances and the characteristics of alliance learning.

Intrinsic and Extrinsic Learning

Individuals in an alliance knowledge community have a value system of learning (McKenna, 2006; Child *et al*, 2005; Furnham, 2005; Nonaka, Toyama, and Konno, 2000; Komin, 1990). The value system of learning can be in intrinsic, extrinsic, or a mixture of them. It underlines knowledge sharing activities. Intrinsic learning is the internal will. This kind of value is based on the characteristics of individuals who seek to be acknowledged or acknowledge others for the sake of learning and sharing knowledge. Extrinsic learning concerns learning of individuals that relate to some kind of intensive action to accelerate acknowledged activities (Cook and Cook, 2005). In managing knowledge, management is the condition for creating extrinsic learning patterns for intrinsic and extrinsic knowledge encounters.

Dynamics of Alliance Knowledge Management

The dynamics of AKM are the forces that affect the sharing of knowledge between organisations in a collaborative network (Child *et al*, 2005; Chua, 2003; Escriba-Esteve and Urra-Urbieta, 2002). Regarding KM in the alliance context, the factors to be considered are in three layers: the individual, intra and inter-organisational levels.

By engaging with the behavioural school of KM, the investigation aims to understand the AKM dynamics related to individuals and the social context of the dynamics.

Collaborative synergies

In the holistic view, synergistic learning benefits also emerge from the process of creating operative benefits, whereas operative benefits can be achieved by the learning synergies (Nielsen, 2005; Nickols, 2000). Although synergistic operative benefits from alliance knowledge networks are more explicit than synergistic learning benefits, learning benefits between organisations are the crucial outcomes of alliance knowledge sharing that enrich and improve performances.

Alliance learning system (ALS)

The ALS is defined as a collection of factors in creating knowledge between organisations (Cimon, 2004; Dussauge, Garrette, and Mitchell, 2000; Morrison and Mezentseff, 1997). Identifying the dynamics of AKM is expected to support the determination of the critical elements in the alliance learning system by extending the principle of Stonehouse and Pemberton (1999)'s the intelligent organisational learning loops. The functions of these elements and the relationships between them limit the attributes of the system and affect the strength of competitive synergies (Nielsen, 2002; Parise and Henderson, 2001).

1.6 The Distinctiveness of the Research

The distinctiveness of this research project is derived from the research objectives, the academic gaps identified, and the evidences arising from the primary research. The research distinctiveness below is a critical basis of the progression of this study. It also supports the further indication of the research contribution in the concluding chapter (Chapter 8). This study is distinctive in the following respects:

- The study extends the theoretical concepts of AKM from a practical perspective by identifying the dynamics of alliance knowledge sharing (*what factors*), roles of the dynamics (*how knowledge is shared*), and relationships between these dynamics (*why the learning happens in the way it does*). While most of the knowledge management literature focuses on general characteristics and methods by which organisations benefit from the integration with knowledge management, much less research has identified the characteristics of inter-organisational knowledge sharing by focusing on knowledge interactions of individuals. Hence, this research configures the dynamics of AKM to understand what the dynamics in alliance point of view are, how these dynamics facilitate or inhibit knowledge creation in AKS, how and why these dynamics relate to each other.

- By examining airline alliances as the case investigations, the study extends the concepts of KM into the field of the airline industry. The existing research on airline alliances centres on collaborative operations, the success and failure of alliances, and resources management. Very little research has

tackled issues of learning, and none have specifically investigated the airline business in the KM context.

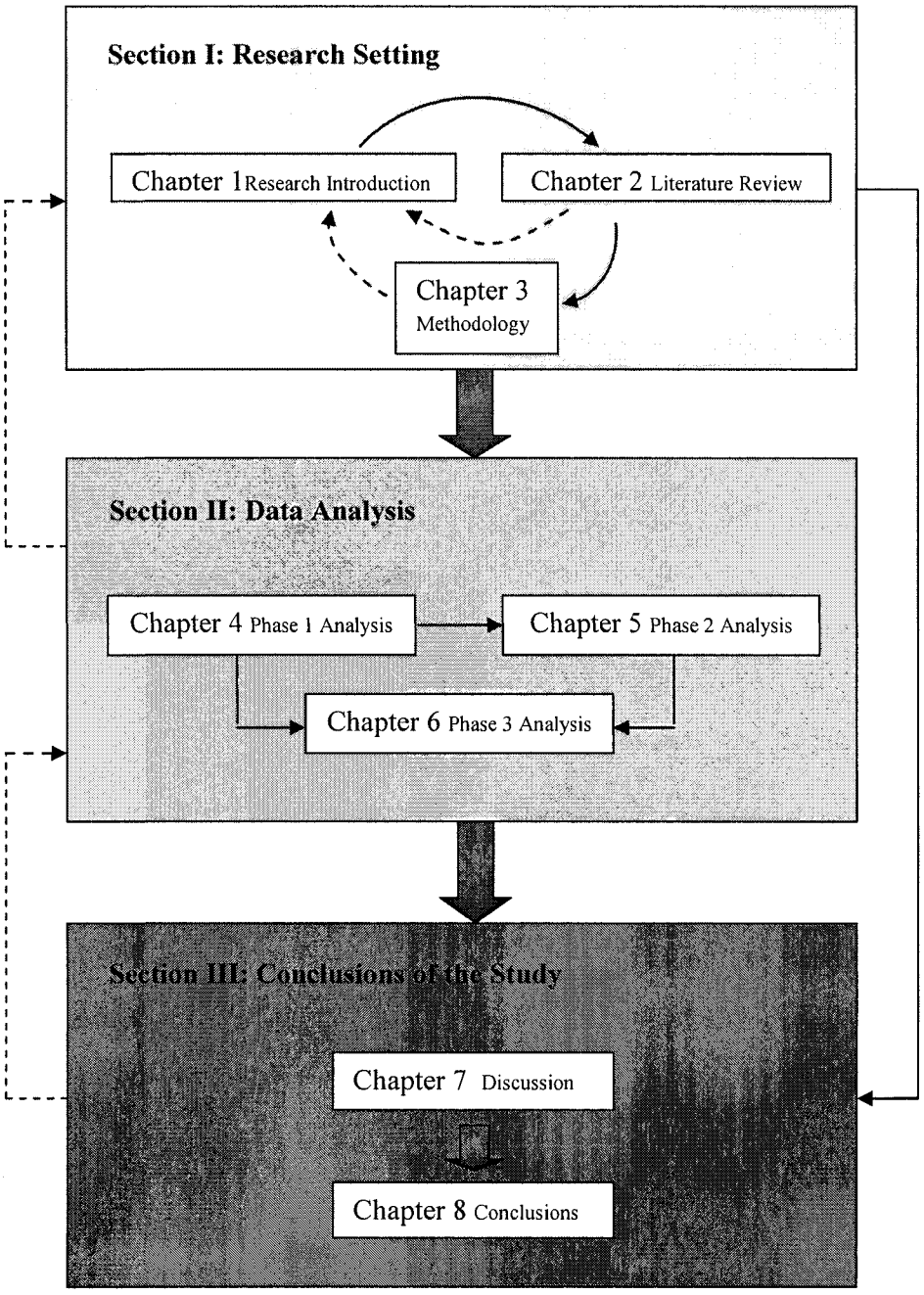
- In terms of geographical boundary and characteristics of local business culture (national culture, local regulations, aviation and technological infrastructures, competitive environments, etc.), by focusing the investigation on Thailand provides more accurate results. That is culture aspects will increase distinctiveness to the study based on the values connected and business circumstances in Thailand.

- Regarding the outcomes of the investigation, KM in the airline industry is in terms of informal application. This finding extends the understanding in the KM field from the identification of the attributes and the impacts of the informal KM utilisation in intra and inter-organisational contexts.

1.7 Thesis Structure

This thesis contains eight chapters in three sections. The three sections are the ***research setting*** (comprising of Chapter 1: introduction to the research, Chapter 2: literature review, and Chapter 3: methodology), ***data analysis*** (including Chapter 4: data analysis Phase 1, Chapter 5: data analysis Phase 2, and Chapter 6: data analysis Phase 3), and ***concluding the study*** (involving Chapter 7: discussion and Chapter 8 conclusions).

Figure 1-1: Thesis Structure



The organisation of the thesis is illustrated in Figure 1-1 which presents the sequence of chapters within the three sections based on the research process.

In the figure, the main sequences in the research process are indicated by arrows. The dashed arrows show the reflexive process and the connections between the chapters within the three sections. The issues relating to the research setting (in section I) are identified and reviewed before further processing in data analysis section (in section II). The research outcomes from section II are then considered in terms of progression the fundamental research issues in section I, and critiqued to conclude the contributions of this study. Concise summaries of the contents of the eight chapters are given below.

Chapter 1 Introduction

Chapter 1 presents the research background, aim, research questions, definition of terms, research distinctiveness, and thesis structure as the introduction of the thesis. The objective of this chapter is to provide the rationale to undertake the study in AKM, frame and direction of the investigation, clarification of some critical terms to initially specify scope of these terms' utilisation in this research, the distinctiveness of this study, and the brief explanation of all presented chapters in this thesis.

Chapter 2 Literature Review

In Chapter 2, the literature on alliance knowledge management, the issues of learning, airline collaborations, and aviation in Thailand are reviewed. The gained understanding in this chapter is the critical supply to trace academic gaps on the knowledge management subject. In fact, it is employed in reasoning the outcomes.

As the dynamics of alliance knowledge management are expected to be identified and further utilised with other central concepts of this study (their roles and relationships in alliance learning system), the discussion in this chapter pinpoints the main components and factors in learning and sharing knowledge between organisations. Airline business circumstances including the collaborative characteristics are also reviewed to provide the framework for the implication of the KM subject with the evidence. The contents of the literature regarding the aviation in Thailand are represented in the latter section of the chapter.

Chapter 3 Research Methodology

In Chapter 3, research methodology of this project is addressed to foreground the fundamental methodological notions in constructing primary research and critiquing the outcomes. The strands regarding research paradigm (social constructionism), critique methodology (interpretivism), and method including procedures in collecting data (triangulation via qualitative and quantitative methods) are discussed to indicate the adopted methodology to answer the research questions. The discussions on reliability, validity, and the research ethics are presented in the last part of the chapter.

Chapter 4 The Data Analysis Phase 1

This chapter presents the findings and analysis from qualitative investigation in Phase 1 which focuses the dynamics in AKM from the perspective of encounters in the airline industry (airlines, alliance networks, and aviation government agencies). The analysis centres on the fundamental characteristics of KM in airline alliances. The critiques are on four themes as the application on knowledge management system,

airlines alliances' knowledge sharing reasons, satisfaction on knowledge based reciprocal benefits, and knowledge sharing channels between partners.

Chapter 5 The Data Analysis Phase 2

Chapter 5 comprises the findings and analysis from quantitative investigation in Phase 2. The purpose is to provide insight into the AKM dynamics (what, why, and how) from the perspective of airlines in alliance networks. The findings enhance the understanding on AKM under the themes of learning culture and knowledge based management system, ICTs in alliance learning and sharing knowledge, and knowledge sharing activities between individuals.

Chapter 6 The Data Analysis Phase 3

Chapter 6 embraces the analysis from qualitative investigation in Phase 3. The investigation answers the research questions in terms of how alliance network learn and how the learning happens in the perspective of alliance networks. The critiques are on the themes of alliance critical values (relationship values, the importance of task achievement, and the competition in cooperation), leadership (styles and conflicts handling), and alliance knowledge flow structure.

Chapter 7 Discussion

The main findings from the primary research are discussed with the other identified dynamics and the frameworks of KM in this chapter. The chapter delivers the discussions on the characteristics of learning within alliances. The further exploration on the characteristics of learning within alliances is based on the configuration on airline alliance knowledge flow structure and the contrast between intra and inter-

organisational learning. These issues focus the relationships between the identified AKM dynamics to acquire the greater understanding on how alliance learning happens.

Chapter 8 Conclusions

Chapter 8 is the conclusions of this research project. In the beginning of the chapter, the contents are in terms of the conclusions of the achievement of the research aim as well as the answers to the research questions based on the development of the research process. From the assumptive view, the research contributions, implications, and limitations are comprised to illustrate the overall contribution to knowledge made by the doctoral study. Related to the outcomes from the empirical investigation on the dynamics in AKM, the suggestions for future research in the area of AKM are proposed in the end of the chapter.

Chapter 2

Literature Review

> *"Different forms of learning are possible in and through the formation of strategic alliances. ...The partner must have an intention to learn. It must have the necessary capacity to learn. It must also be able to convert any knowledge it gains into a usable organisational resource."*
>
> *Child et al, (2005, p. 299)*

2.1 Introduction

To investigate dynamics in AKM, there are a number of theoretical concepts that are the background for approaching the dynamics, their relationships and impact on performance, which are the aims of the investigation. In this chapter, the literature review will discuss three main issues of AKM, characteristics of strategic alliances, and airline strategic alliances.

The section on AKM comprises the issues of cognition and knowledge interactions in an alliance knowledge community. These issues are presented under the sections of input-output factors (knowledge, knowledge-based perspective, and types of knowledge), learning process (knowledge conversion processes), knowledge creation (individual, intra and inter-organisational learning), and learning environments (elements in knowledge management system (KMS)).

As for the sections on characteristics of strategic alliances and airline alliances, the subjects for review include the nature of alliances, characteristics of airline alliances, airline alliances facts (history, reasons, and lessons), and Thai aviation.

2.2 Alliance Knowledge Management

Organisations have adopted the practices of KM (whether formal or informal) since its formation. Systematically managing knowledge is a conveyance that can shift organisations into a status of real sustained competitive advantage (Pemberton and Stonehouse, 2005; Stonehouse, Campbell, Hamill, and Purdie, 2000; Porter, 1998). KM is the method of leveraging information and expertise to improve organisations' innovation, responsiveness, productivity, and competency. Ultimately, Davenport and Prusak (2000) explain KM as a cycle that involves capturing, acquiring, creating, developing, transferring, applying, and maintaining knowledge.

In the case of AKM, its scope is more extensive than KM when the issue deals with multi-knowledge communities that are from different originated organisations for the unified purposes of collaboration. A number of theorists view strategic alliance as a mechanism for organisational learning (Somnath, Pradyot, and Sanijit, 2003; Alejandro and Jose' Anastasio, 2002; Costello, 1996; Dodgson, 1993; Hamel, 1991; Hamel *et al*, 1989; Kogut, 1988). The application of knowledge and learning theories to alliance communities signifies the process of learning in complex natures of multi-organisational levels (intra and inter organisations). Costello (1996) defines AKM as

> "*The process of managing the cycle of capturing knowledge about alliance activities and learning from that knowledge about scope for improved alliance effectiveness through changes to behaviour and alliance activity*"
>
> *Costello (1996, p.29)*

According to the definition, this reflects the significant components of AKM, which are also indicated by other theorists as alliance agreements, alliance learning, alliance knowledge interactions, leadership, collective learning outputs, and learning agents (Khamseh and Jolly, 2008; Das and Kumar, 2007; Connell and Voola, 2007; Child *et al*, 2005; Pansiri, 2005; Cimon 2004; Rich, 2003; Escriba-Esteve and Urra-Urbieta, 2002; Dussauge *et al*, 2000; Inkpen, 2000; Khanna, Gulati, and Nohria, 1998; Werther, 1998).

The issues regarding AKM dynamics are in terms of elements and processes of knowledge creation (developing knowledge of alliance representatives, extracting alliance knowledge in explicit forms, and facilitating individual and alliance knowledge interactions). Relating the concept and the components of AKM to the study of its dynamics of this research project (including dynamics, relationships between dynamics, and impacts on AKM performances), the basic notion on AKM is shaped by "***alliance learning patterns deriving from knowledge interaction (socialisation and transferring knowledge materials) between alliance leaders and member representatives under alliance agreements for the desired collective outputs***".

From reviewing AKM literature by focusing on elements and processes of knowledge interactions, the arrangement of AKM principles for utilisation in the investigation approaches the reviewed literatures in terms of system, structure, social, cognitive, and process attributes. Table 2-1 illustrates the critical AKM literature and the arrangement for the applications to this study.

Table 2-1: AKM Literature and the Arrangement for the Research Applications

Authors	Critical Contents	Focuses of AKM (system, structure, social, cognitive, and process)	Implications to this Study and Linkage to Research Questions
1). Hasgall and Shoham (2008)	The necessity to access personal knowledge of each employee under complex adaptive system of organisational environment.	Cognitive and System	Dynamics in AKM and relationships between dynamics (Q2 and Q3)
2). Khamseh and Jolly (2008)	Determinant factors of alliance knowledge transfer.	System	Dynamics in AKM (Q1,Q2, and Q3)
3). Das and Kumar (2007)	Types of alliance learning in stages of alliance development process.	Structure, Social, and Process	Dynamics in AKM (Q1)
4). Nielson (2005)	The role of knowledge related relationship in the creation of synergies in strategic alliances	System and Social	Dynamics in AKM and relationships between dynamics (Q2 and Q3)
5). Cimon (2004)	The effects of knowledge asymmetries (information, knowledge, and learning) on alliance stability.	System	Relationships between dynamics (Q2 and Q3)
6). Grant and Baden-Fuller (2004)	The ways to access knowledge in strategic alliances to sustain competitive advantage.	System and Process	Dynamics in AKM (Q2 and Q3)

Continued

Authors	Critical Contents	Focuses of AKM (system, structure, social, cognitive, and process)	Implications to this Study and Linkage to Research Questions
7). Linnarsson and Werr (2004)	Controversy between alliance objectives and characteristics of alliances (detailed contractual regulation, political struggles, and limited information exchange).	System	Dynamics in AKM and impacts on AKM performances (Q1,Q2, and Q3)
8). Escriba'-Esteve and Urra Urbieta (2002)	Different levels and settings of organisational learning processes between co-operative companies.	System, Social, and Process	Dynamics in AKM (Q2 and Q3)
9). Dussange et al (2000)	The outcomes of alliance learning between competitive organisations	System and Social	Impacts on AKM performances (Q1,Q2, and Q3)
10). Khanna et al (1998)	The effects from the tension between cooperation and competition on learning in alliance communities.	Social	Dynamics in AKM, relationships between dynamics, and impacts on AKM (Q2 and Q3)
11). Larsson et al (1998)	The illustration of inter-organisational learning dilemma from the development of collective learning and dividing the joint learning outcomes.	Social and Cognitive	Dynamics in AKM, relationships between dynamics, and impacts on AKM (Q1,Q2, and Q3)
12). Inkpen (1998)	The characteristics of KM in international joint ventures	System	Dynamics in AKM (Q1,Q2, and Q3)
13). Doz (1996)	Learning dimensions in strategic alliances	System and Social	Dynamics in AKM (Q1)
14). Khanna (1996)	The existences of competitive and cooperative behaviours of alliance organisations.	System and Social	Dynamics in AKM and relationships between dynamics (Q2 and Q3)
15). Gulati (1995)	The effects of interaction processes towards agreements between alliance partners.	System and Process	Impacts on AKM performances (Q2 and Q3)

Notes: Q1, Q2, and Q3 stand for research question 1st, 2nd, and 3rd

Managing alliance knowledge also relates with basic principles of KM according to the orientation of the nature of knowledge. Hasgall and Shoham (2008), Senge (2006), Wood (2002), Stonehouse and Pemberton (1999), Bhatt (1998), and Nonaka and Takeuchi (1995) define management of knowledge as being about management on *input-output factors* (tacit knowledge, technology, and knowledge materials), *learning processes* (knowledge interactions between individual and technology as well as between individuals), *knowledge creations* (individual and organisational learning), and *learning environments*. Regarding this view in relation to the concept of AKM, knowledge interactions in alliance networks are under a socio-technical environment (Grieves *et al*, 2006; Pemberton and Stonehouse, 2005).

Khamseh and Jolly (2008), Nielsen (2005), Escriba-Esteve. and Urra-Urbieta (2002), Khanna (1998), and Argyris (1993) state that the balance of managing individuals, ICTs, and interaction are varied. These are based on complex socio-technical environments set by the agreement of an alliance network, the degree of collaboration, and the setting of the particular business environment. The balance of managing knowledge in a competitive alliance network is directly related to a proportion of competition and cooperation.

Khanna *et al* (1998) propose that the greater the overlap between alliance scope and partner organisations' scope, the more common benefits (alliance benefits) and the lower the private benefits (benefits of partner organisations). Inkpen (2000) who believes in "trust" within alliance networks argues that this view does not cover many aspects of alliances, particularly for the new knowledge creation whereby members trust each other in joint developments which provide common benefits as much as

private benefits. In case the continuity of private benefits erode while alliance benefits are extended, it will question the direction of future relationships (Chatterjee, 2007; Child *et al*, 2005; Nielsen, 2005 and 2002; Inkpen, 1998; Sharma, 1998). Nevertheless, it is rarely occurred without negotiation and agreement of members (Culpan, 2002; Morrish and Hamilton, 2002; Inkpen, 1998; Inkpen and Beamish, 1997).

As it has been mentioned, KM between competitive organisations integrates the issues of competition and cooperation, in which there is always a paradox of knowledge sharing. The existence of these natures of alliance knowledge sharing is also described in the literature, which is grouped into two domains.

Some studies into the patterns and system of AKM indicate cooperative dimensions such as the study by Connell and Voola (2007) on characteristics of relationship marketing orientation in alliance knowledge sharing, Jones, Chonko, and Roberts (2003) on knowledge creation culture in strategic alliances and Escriba-Esteve and Urra-Urbieta (2002) on knowledge-based and learning perspective of inter-organisational cooperation. Hall (2001) also focused on values' development from the creation of collaborative learning organisations, and Inkpen (1998) studied the opportunity and processes of learning and knowledge acquisition through international strategic alliances.

On the other hand, the studies on learning obstructions specify competition between alliance partners, such as Grieves *et al* (2006) and Yin-Tong Sun and Scott (2005) on knowledge transferring barriers, Das (2005) on deceitful behaviours of alliance

partners and Kale, Singh, and Perlmutter (2000) on learning and protection of proprietary assets in strategic alliances. Barber (1998) studied the utilisation of a central reservation system to gain competitive advantage by the system owner airlines and Larsson, Bengtsson, Henriksson, and Sparks (1998) concentrated on five learning strategies based on inter-organisational learning dilemma.

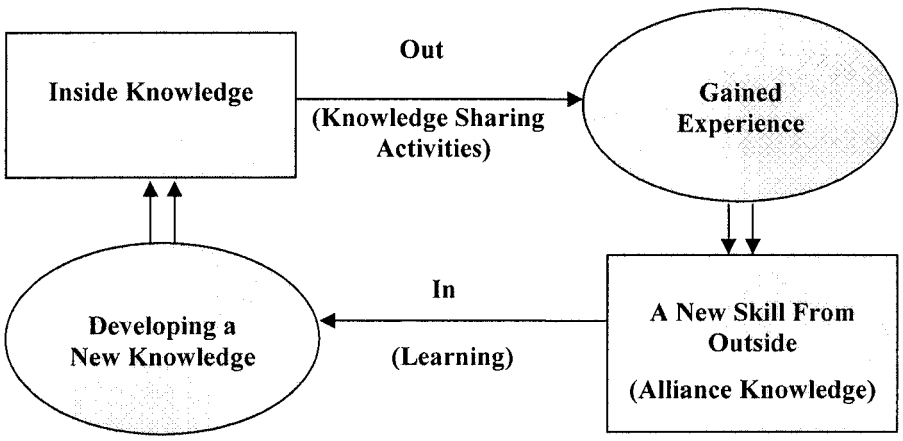
Ultimately, Doz and Hamel (1998) and Khanna *et al* (1998) determine that alliance advantage influences organisations to collaborate with others to create alliance benefits as well as enhance their private benefits. However, these organisations require common benefits to achieve the aimed collective outputs which derive private benefits back to collaborative partners (Inkpen, 2000; Inkpen and Beamish, 1997; Kogut,1988; Pfeffer and Nowak, 1976). Based on the natures of collaboration between competitors and the underlined reasons of organisations in affiliation, competitive behaviour is always controlled and adjusted by behaviour that is consonant with cooperative aim (Das, 2005; Cimon, 2004; Dussauge *et al*, 2000; Larsson *et al*, 1998).

Notwithstanding the diverse approaches between competition and cooperation on sharing knowledge, alliance partners have to control competition in cooperation at a suitable level as the competitive behaviour can dilute good relationships within the group and have an effect on the expected private benefits of partners. Then, it should be realised that the balance of competitive and cooperative behaviour in an alliance network is based on a principle of "*giving and taking*".

According to Child *et al* (2005), Grant (1996), and Prahalad and Hamel (1990) in terms of competence and performance improvement, superior performances from collaborative partners are collectively utilised by targeting to achieve their joint activities' objectives. Within this process, the conglomerated capabilities are derived from partners' knowledge to develop group knowledge and distribute new knowledge to partners to strengthen their competences.

Hereupon, the argued characteristics of AKM and the connection of the presented literature support the initial configuration of alliance knowledge flow, which is illustrated in Figure 2-1. The presented cycle of knowledge flow in strategic alliance is in the perspective of "***inside-out to outside-in learning***".

Figure 2-1: The Cycle of Alliance Partners' Knowledge Flow



Source: Author

The illustration from the figure above is based on the concept of giving and taking that is circulated by knowledge. The knowledge of alliance partners is utilised in collaborative activities, which are framed by alliance agreements. Cooperation between partners provides experience and a jointly-developed platform to create new skills, which alliance partners further utilise in their organisations and in the group.

As argued in the beginning, when organisations get together to strategically ally to each other, it is unavoidable for them to share their knowledge, one way or another. Thus, the role of knowledge management in alliance networks is basically to facilitate the extraction, utilisation, and development of individual knowledge as well as articulate knowledge in order to improve the performances of member organisations and the network. Although the scope of AKM is more extensive than KM, as discussed above, the factors in managing knowledge in intra-organisational level are also the basic components in AKM. Then, the further discussion in the next sections will focus on KM principles that related to the investigation on AKM of this study.

2.2.1 Stonehouse and Pemberton (1999)'s Organisational Learning System

According to the overall objectives of this study to understand the dynamics of AKM, it is important to configure the potential dynamics, their roles, and relationships between them. From reviewing the study of Stonehouse and Pemberton (1999) on organsational learning systems, the critical elements of the system at intra-

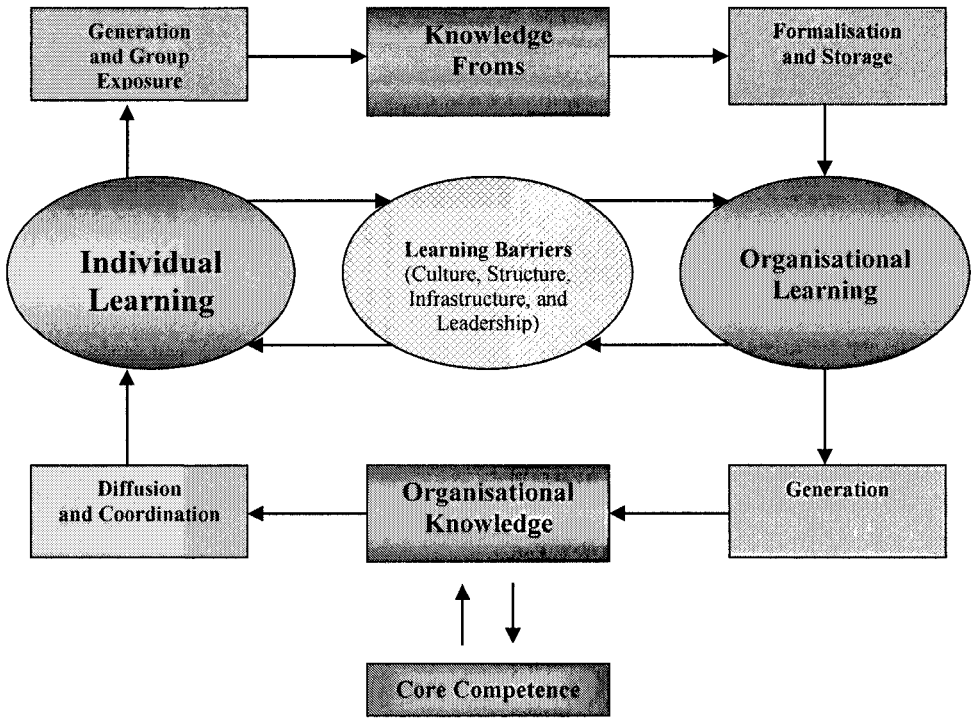
organisational level can benefit the investigation in inter-organisational level of this research project.

Stonehouse and Pemberton (1999) introduce intelligence as the distinction between learning and adaptation. Under the scope of strategic management, they argue "intelligence depends upon an ability to acquire information, manipulate, analyse, and interpret it through reasoning and learning, which results in the generation of relevant and timely knowledge". Furthermore, they propose a framework that organisations create intelligence as organisational learning loops (See the annotation in Figure 2-2).

The concept from the figure embeds roles and relationships of influencing learning factors in organisations (Pemberton and Stonehouse, 2000). From the figure, all learning factors relate to each other by learning interaction of individuals in the organisation. Without transferring, knowledge cannot be shared and a new knowledge cannot be created. In this scenario, knowledge in organisations is transferred by individuals' knowledge generation and group exposure. The created knowledge in various forms is extracted to patterns that can be formalised and stored in order to be retrieved for further organisation learning.

Stonehouse and Pemberton (1999)'s organisational learning loops model comprises ten elements. These are knowledge forms, formalisation-storage, organisational learning, generation, organisational knowledge, diffusion-coordination, individual learning, generation-group exposure, learning barriers and core competence.

Figure 2-2: Organisational Learning System



Source: From Stonehouse and Pemberton (1999, p.134)

To identify dynamics in AKM, the existing literature on intra-organisational learning will be the critical input for further configuring factors and characteristics of AKM, relations between factors, and their influences on synergistic knowledge creation. Moreover, Stonehouse and Pemberton (1999)'s framework is the initial scope to further review other KM theories that relate to the investigation on AKM of this

research project. Table 2-2 presents the structure of literature review and the elements of Stonehouse and Pemberton (1999)'s organisational learning system.

Table 2-2: The Structure of Literature Review and the Elements of Stonehouse and Pemberton (1999)'s Organisational Learning System

The Structure of Literature Review	The Elements of Stonehouse and Pemberton (1999)'s Organisational Learning System
1). Input-output factor	Knowledge forms, organisational knowledge and Core Competence
2). Learning process	Formalisation-storage, generation, diffusion-corordination and generation-group exposure
3). Knowledge creation	Organisational learning and individual learning
4). Learning Environments	Culture, structure and communication infrastructure

With reference to the view of the four main functions of factors in KM (input-output factor, learning process, knowledge creation, and learning environments) as introduced earlier, KM principles of the theorists in Table 2-2 will be further discussed in connection with these views. Based on the lists, Polanyi (1966), Nonaka (1991), Senge (2006 and 1992), and Bhatt (2001 and 1998) are the critical theorists to be reviewed on the ***input-output factor*** (knowledge). In the case of ***learning process*** (knowledge conversion processes), the studies of Jasimuddin *et al* (2005), Nonaka and Takeuchi (1995), and Kamoch (1997) are the main discussion points. Mckenna

(2006), Child *et al* (2005), Furnham (2005), Argyris (2001 and 1977b), Senge (1992), and Nonaka (1991) set out the main principles to review the case of ***knowledge creation*** function (learning). As for ***learning environments*** (culture, structure, and communication infrastructure), the works of Grieves *et al* (2006), Komin (1990), Hofstede (1985), and Mintzberg (1983) are the main studies to be discussed.

2.2.2 Knowledge (Input-Output Factor)

Practically, a successful alliance is the outcome of effective resource integration and utilisation between partners in the group. According to Wernerfelt (1995), resources are assets in both tangible and intangible forms which are tied semi-permanently to organisations. In a knowledge-based perspective, knowledge is considered as a resource and also exists visibly and invisibly.

In fact, strategic alliance is the process of resources combining and capability contribution (Khamseh and Jolly, 2008; Das and Kumar, 2007; Cimon, 2004; Doz, 1996). Knowledge in a collaborative group is deployed and developed from partners' knowledge. Each partner's knowledge is derived from its core competence. Core competence in an organisation is collective resources that drive distinct value in a particular business activity. In competitive collaboration, knowledge integration in the group is gathered from complementary core competences to create a chain of excellence (Hamel *et al*, 1989). Knowledge-based resources are in the aspects of content, experience and skill, and process (Bhatt, 2002 and 2001). Dussauge *et al*

(2000) and Stonehouse and Pemberton (1999) add that these aspects of knowledge are transferred to other partners and the group by learning.

Regarding the concept of knowledge based perspective above in accordance with reviewing knowledge management literature, it can be concluded that the increasing amount of literature on knowledge-based perspective (knowledge as the critical primary resource) can be divided into three schools of thought as "*information*" (Tsui, 2005; Marchand *et al*, 2000; Costello, 1996), "*human factor*" (Senge, 2006; Cook and Cook, 2005; Chua, 2003; Koch, 2002; Dougherty, 1999), and "*interaction management*" (Maguire and Redman, 2007; Smoliar, 2003; Bhatt, 2001; Davenport, 1994; Divitini, Omodei Sale', Pozzoli, and Simone, 1993). In the case of knowledge-based perspective in the collaborative context, the majority of literature on the knowledge-based view is focused on interaction management in terms of sustainability, quality, structure, and governance (Escriba-Esteve and Urra-Urbieta, 2002; Parise and Henderson, 2001; Dussauge *et al*, 2000; Inkpen, 1998; Kogut, and Zander, 1992; Contractor and Lorange, 1988).

Since this study approaches dynamics in AKM, it is a knowledge-based view that highlights human factors and interaction management. According to the investigation boundary, the principles on dimensions of knowledge are the fundamental issues to crystallise the knowledge-based view of factors that drive AKM.

Ultimately, the term "knowledge" in management study, is fundamentally viewed as "a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information" (Davenport and Prusak, 1998). Cohen and Prusak (2001) and Denning

(2001) point out that knowledge (in the form of skill and competency) is normally acquired through training, socialisation, and interaction with the environment. Knowledge originates and is applied in the minds of individuals (Polanyi, 1966). In organisations, it often becomes embedded not only in documents or repositories but also in organisational routines, processes, practice, and norms (Davenport and Prusak, 1998). It is the critical input and output factor in managing knowledge. However, knowledge that is embodied in documents does not necessarily translate into useful and usable knowledge unless it is read, digested, manipulated, and communicated from one person to another (Al-hawamdeh, 2003).

Generally, knowledge is understood as a deeper and richer context than data and information. Knowledge is a kind of context. If data is the signals of events and activities without context and meaning in itself, then information is data in a formation via contextualisation, categorisation, calculation, correction, condensation, etc. (Davenport and Prusak, 2000; Dixon, 2000). Knowledge, in these scenes, therefore, is defined as a stage of linkage between information and its application, which contains the active and subjective natures that present experience and belief of that knowledge source (Nonaka and Teece, 2001).

Notwithstanding the specific characteristics of the terms as indicated above, knowledge, information, and data are stages of acknowledgement (Bhatt, 2001; Stonehouse and Pemberton, 1999). In practice, information and data are knowledge potential content. Ultimately, to be knowledge, the knowing requires a translation into a meaningful and usable content. Hereby, it is an internal creative transformation of knowledge receiver. Thus, knowledge is differentiated by the change of justified

belief which can be reflected in expressed meaningful behaviour (Al-hawamdeh, 2003; Dueck, 2001; Nonaka and Takeuchi, 1995; Kogut and Zander, 1992).

Knowledge is composed by various elements. It can be both unstructured as well as formally structured. When it is not realised in its existence and utilisation, it does not mean it does not exist. Moreover, Marchand, Davenport, and Dickson (2000) state knowledge has no value unless it is applied to decisions and actions in a purposeful context. Hence, when it is realised, it can be utilised systematically and efficiently. From identifying themes of knowledge, differentiating knowledge from other stages of acknowledgement, and approaching on types of knowledge, characteristics of knowledge in organisation management will be further discussed in terms of forms and sources of knowledge.

The awareness of forms and sources of knowledge will support the investigation on dynamics of AKM. It will consequently provide clues for the empirical investigation on factors and forces of knowledge transfer. An effective knowledge transfer between organisations is related to complicated issues more than the sharing of knowledge and learning. It embraces facilitating, inhibiting, and conditions of knowledge creation factors (Klein, 2008; Grieves *et al*, 2006; Das, 2005; Yin-Tong Sun and Scott, 2005; Stonehouse, Pemberton, and Barber, 2001). It includes transformation and development (Nonaka and Takeuchi, 1995; Nonaka, 1994 and 1991). It relates to learning formats (Senge, 2006; Argyris, 2001, 1977b, and 1976; Pemberton and Stonehouse, 2000; Argyris and Schon, 1996). These characteristics can be traced from specifying forms and sources of knowledge.

2.2.2.1 Knowledge Forms

According to Nonaka (1991), knowledge exists in two forms; tacit and explicit. Nickols (2000) addresses implicit knowledge as another form of knowledge in organisational management according to the criticality of the expressed knowing in terms of skill and experience in performing job-tasks. Nevertheless, a number of academic authors regard forms of knowledge in terms of explicit and non explicit forms (Shedlund, 2008; Jasimuddin, Klein, and Connell, 2005; Nonaka and Takeuchi, 1995; Polanyi, 1966). In this study, implicit knowledge is a part of tacit knowledge and mentioned to refer to the non explicit form of knowledge.

Tacit (or implicit) knowledge exists internally and is difficult to articulate, formalise, and communicate (Harlow, 2008; Cavusgil, 2003; Nonaka and Takeuchi, 1995; Polanyi, 1966). It is expressed in performing a job-task (Kim, Yu, and Lee, 2003; Nickols, 2000). In contrast, explicit knowledge is tangible, expressed in formal systematic terms, and is always visible (Shedlund, 2008; Jasimuddin *et al*, 2005; Smith, 2001). Practically, forms of knowledge are connected in developing existing knowledge and creating new knowledge (Gill, 2000).

Knowledge forms address specific characteristic details of knowledge to manage. Actually, every form of knowledge is important for inter-organisational knowledge creation. Although alliance knowledge resource also exists in all forms in cooperative activities, the gained tacit and implicit knowledge from collaboration of member representatives are privately further provided back to their organisations while explicit knowledge from collaboration is distributed similarly to all partners.

In addition, the transferred knowledge is complex in a sense of knowledge forms conversion when it passes from knowledge encoder to knowledge decoder and vice versa. That means forms of knowledge are also conversed from one form to another and between the same form under conditions of knowledge and learning counterparts.

2.2.2.2 Knowledge Sources

To differentiate knowledge by its source, knowledge can be seen as knowledge from individual and knowledge material. Knowledge sources indicate where to manage knowledge. According to Senge (2006), Kamoche (1997), and Polanyi (1966), knowledge from individuals resides in the mind, is internally developed, provides personal quality, and usually is less tangible than knowledge material.

Conceptually, Brown and Duguid (1998) indicate that knowledge is not the property of an individual but rather held collectively by people working together. However, when knowledge is internally originated and developed (Davenport and Prusak, 2000; Polanyi, 1974), knowledge is the property of an individual that is conditionally shared to others and some of it is converted to organisational knowledge by articulations (Dougherty, 1999).

Polanyi (1974) states people know more than they can tell. Naturally, they tell less than what they realise they know, whether from lack of confidence on the certainty of what they know, social context, cultural issues, ability to share knowledge, conditions of ICTs, or politics in organisation (Chua, 2003; Bailey and Clarke, 2001; Gill, 2000;

Bhatt, 1998; Noypayak and Speece, 1998; Kamoche, 1997). Then, to impel people to realise more and share more on what they know, management by understanding dynamics that limit cognition and obstruct knowledge sharing will smooth knowledge transfer in organisations.

As for knowledge materials, they are artifacts. The benefits of knowledge materials depend on the individual who uses them (Stover, 2004; Haldin-Herrgard, 2000). Knowledge materials are a more permanent form of organisational knowledge. According to Holsapple (2005), Tsui (2005), Waring (2004), Skyrme (2003), Mentzas, Apostolou, Young, and Abecker, (2001), and Marwick (2001), computerised systems and technology have important roles on producing, revising, and adjusting knowledge materials. These roles of technology are facilitating the creation of knowledge. According to Bhatt (1998), Kamoche (1997), Senge (1992) on individuals' capability in creating knowledge, knowledge materials are the forms of knowledge storage and rearrangement rather than knowledge creation.

The change of knowledge forms and sources occurs in knowledge conversion processes. These will be further explained in the next subsection.

2.2.3 Knowledge Conversion (Learning Process)

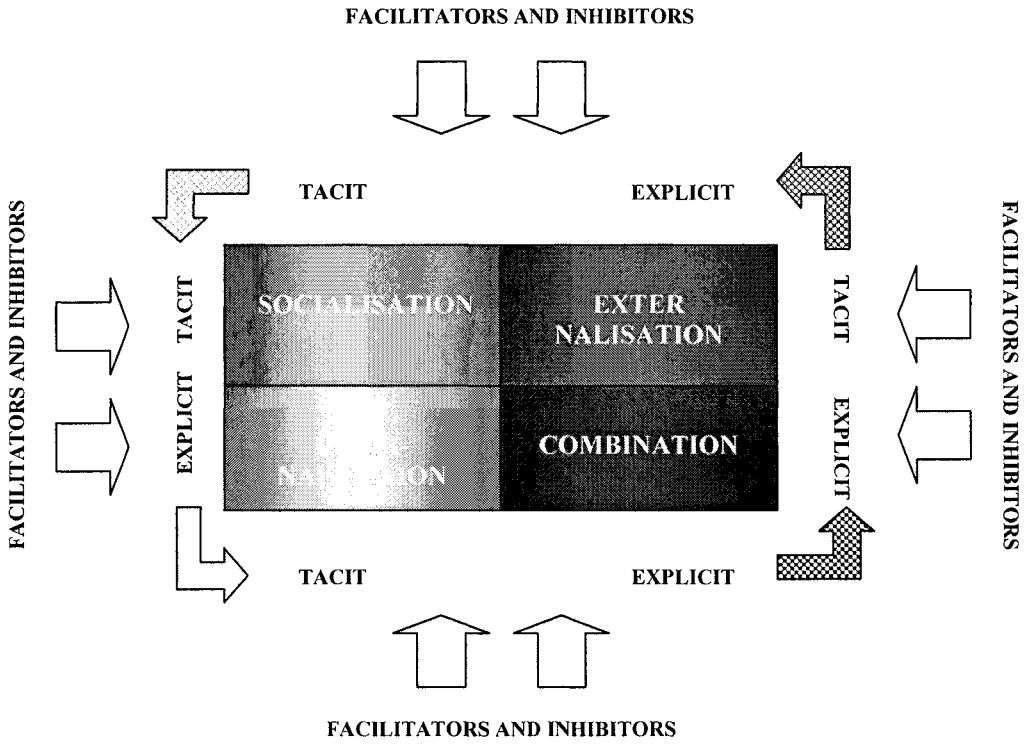
A change of knowledge in one form to another and the updated knowledge between the same forms would embrace changes of knowledge in terms of source and influencer. These processes exist as the learning processes of individual and

organisation. The characteristics of dynamics in learning process are related to knowledge conversion. With reference to Nonaka and Takeuchi (1995), forms of knowledge are also generated from one form to another and between the same forms. Gill (2000) suggests that tacit and explicit knowledge connect to each other in synergetic relationship. Furthermore, knowledge grows cyclically and spirally from one form to another and between the same forms (Campos and Sanchez, 2003).

According to Nonaka and Takeuchi (1995)'s forms of knowledge, knowledge is created and updated by processes of knowledge conversion between tacit and explicit knowledge. They introduce the learning processes as four modes of knowledge conversion processes. They are socialisation (from tacit to tacit), externalisation (from tacit to explicit), combination (from explicit to explicit), and internationalisation (from explicit to tacit). (See the illustration in Figure 2-3).

From the concept of knowledge conversion by Nonaka and Takeuchi (1995), the process of ***socialisation*** can happen when an existing tacit knowledge is further created or upgraded by the new captured knowledge. According to Bhatt (2001 and 1998), it is an interaction between tacit background and foreground knowledge. Related to this view, learning from the socialisation process is based on practicing the dominated skill (*internal socialisation*) and capturing the foreground knowledge that does not explicitly exist from the external environments and employs it in internal knowledge development.

Figure 2-3: SECI MODEL



Source : Adapted from Nonaka and Takeuchi (1995)

A conversion from explicit to tacit creates a process of ***internalisation***. The concept of internalisation is about applying explicit knowledge in developing the decoder's tacit knowledge. Therefore, the gained tacit knowledge is built up in accordance with experience and belief of the decoder in understanding the explicit knowledge (Senge, 2006; Nonaka, 1994). To facilitate this process in an organisation, the critical concerns should be on producing qualified explicit knowledge (updated and accurate) and creating a learning environment that supports explicit knowledge application in creating tacit knowledge (Child *et al*, 2005; Li and Gao, 2003; Smith, 2001).

In the case that knowledge is transferred from tacit knowing (of an encoder) to documentation or other kinds of knowledge materials, it is a process of ***externalisation***. Herschel, Nemati, and Steiger, (2001) explain externalisation process as the distinct and tangible organisational knowledge asset creation. This knowledge conversion process provides a critical role to IT in knowledge creation in terms of recording, organising, structuring, processing, retrieving, and updating (Holsapple, 2005; Jasimuddin *et al*, 2005; Tsui, 2005; Marwick, 2001). In the digital era, Holsapple (2005) and Davenport (1994) propose that the greater the requirement on creating tangible knowledge, the greater the necessity of IT utilisation in creating knowledge of the organisation.

From the explanation of Nonaka and Takeuchi (1995), ***combination*** is a conversion process of an explicit knowledge and a more complicated explicit knowledge. Other than the case of automated combination, value added knowledge in this kind of conversion is hardly separated from the influence of tacit knowledge. Therefore, this process of knowledge conversion is contingent in various practical issues according to human ability in combining and upgrading knowledge (Senge, 2006; Dueck, 2001; Thomas, Kellogg, and Erickson, 2001).

In accordance with the discussion on the attributes of the knowledge conversion processes, the notion of the influences of knowledge sharing facilitators and inhibitors as illustrated in Figure 2-3 is vital towards the creation of knowledge in alliance networks. These issues are further discussed in section 2.2.3.2. As for the next

section, the review is on the other studies that adopt the concept of the SECI framework.

2.2.3.1 The Views and Applications of SECI Framework

From reviewing research papers in terms of the application of SECI model, various theorists both academics and practitioners adopt this model to approach knowledge creation in various business sectors and in many aspects of organisational application such as Desouza and Awaza (2006),who use the SECI model to investigate SME's capability in managing knowledge, Li and Gao (2003) trace the SECI model in approaching the criticality of tacit knowledge, Campos and Sanchez (2003) examine the spirals of knowledge in the SECI model with strategic business process, and Smart, Maull, Rador, and Housel (2003) adopt the SECI model in identifying value in business processes.

In the quest of KM in SMEs, Kolosz (2006) criticises Nonaka and Takeuchi (1995) on the concept of the knowledge creation process in the SECI model that embedded on internal perspective of knowledge creation (individual, group, and organisational levels) and required more focus on knowledge creation from external factors to benefit managing knowledge in organisations. In addition, he concludes the deliberated characteristics of processes in the SECI model as "empathising" in socialisation, "embodying" in internalisation, "articulating" in externalisation, and "connecting" in combination.

Srinvas (2003) approaches knowledge management by knowing status and existence of knowledge to identify knowledge gap (knowledge you know you do not have). In application to Kolosz (2006)'s descriptions on the four modes of knowledge conversion, knowledge gap is the identified status for the requirements for empathising, embodying, articulating, and connecting.

Under the perspective of knowledge acquirer (which is the role of all partners according to affiliation objectives and the emergence of competitive sense in collaboration (Shedlund, 2008; Larrson *et al*, 1998; Sharma, 1998)), occasions and methods to use knowledge conversion processes in the SECI model are crucial tactics in leveraging with learning resisted factors of inter-organisational KM.

Kolosz (2006) set out the descriptions of the characteristics of the knowledge conversion process as follows: ***knowledge scrutinisation*** (such as in group operation and observation) is a method for empathising knowledge in the socialisation process, ***knowledge absorption*** (such as reviewing job-task instruction and reading report) is a method for embodying knowledge in the internalisation process, ***knowledge capturing*** (such as writing a report and structuring cooperative platform) is a method for articulating knowledge in the externalisation process, and ***knowledge integration*** (such as updating records and amending reports) is a method for connecting knowledge in a combination process.

Additionally, Jasimuddin *et al* (2005) and Henson, Nohria, and Tierney, (1999) explain personalisation and codification strategies as the concepts for tacit and explicit knowledge utilisation. They define "***personalisation strategy***" as an approach

where knowledge is closely tied to the person who developed it, while in the "***codification strategy***", it is an approach to codify and sort knowledge in databases which the authorised people in the organisation can easily use.

Regarding these concepts with the theoretical and tactical descriptions of knowledge conversion processes, socialisation and internalisation correspond with the conditions of personalisation strategy, based on the presence of tacit knowledge for internal and private human knowledge creation. As for externalisation and combination processes, their characteristics are under the theme of codification strategy according to the delivered outputs in explicit forms of knowledge.

The configuration from the arguments in this section on knowledge conversion processes, the functional descriptions of the processes, related knowledge management strategies towards knowledge conversion, and the tactics of learning-sharing knowledge is illustrated in Table 2-3.

Table 2-3: Theoretical, Strategic, and Tactical Descriptions of Knowledge Conversion Processes

Knowledge Conversion Processes (Nonaka and Takeuchi, 1995)	Process Descriptions (Kolosz, 2006)	Strategies (Jasimuddin *et al*, 2005)	Tactics
Socialisation	Empathising	Personalisation Strategy	Knowledge Scrutinisation
Internalisation	Embodying		Knowledge Absorption
Externalisation	Articulating	Codification Strategy	Knowledge Capturing
Combination	Connection		Knowledge Integration

Sourced: configured and applied from Nonaka and Takeuchi (1995) p. 62, Kolosz (2006) p. 43, and Jasimuddin *et al* (2005) p. 106.

2.2.3.2 Knowledge Conversions under Alliance Conditions

Approaching knowledge transfer in alliances, value is added up to every phases of knowledge conversion when learning processes take part between organisations (Das and Kumar, 2007 and Herschel *et al*, 2001). According to Khamseh and Jolly (2008), Fenwick and Mcmillan (2005), Larsson, *et al.* (1998), value of transferred knowledge is dependent on relationship and conditions among knowledge, encoder, and decoder; whether that transferred process puts the right knowledge (relevant and enough content) from the right encoder (has skill of that knowledge and know how to transfer) to the right decoder (relevant to that knowledge and with adaptability skill).

Although Nonaka and Takeuchi, 1995's knowledge conversion framework contains four methods, there are many applications for arranging knowledge conversion

processes in transferring knowledge. In practice, the process arrangement formats are dependent on circumstances of that learning process and capability of the knowledge distributor to organise his knowledge transfer structure. The choices of these formats are also related with levels of effectiveness and efficiency in knowledge transfer. As for compatibility, it is a triangulated compatibility among knowledge, encoder, and decoder in terms of culture, experience, skill, language, etc.

Based on Das (2005) regarding the stipulated collaborative activities according to agreement and stages of collaboration in an alliance network, partners are competitors in several ways. As mentioned, collaboration embraces the issue of competition and cooperation, knowledge outbound flows are suspected to be naturally deterred in several circumstances (Khanna *et al*, 1998). ***To relate the issue of internal competition in alliance cooperation with knowledge conversion process, socialisation and externalisation involves knowledge hoarding opportunity from the participation of tacit knowledge in outbound knowledge transfer***. The emerged situation can impede the learner in collecting critical knowledge which obstructs the further knowing process to fully benefit other partner organisations in the network.

Indeed, success of a network does not derive only from achievement of the network itself, but also from achievement of members in the network. Thus, compatibility and adaptability among the differences combined with the balance between knowledge facilitators and inhibitors are a foundation of alliance knowledge transfer.

2.2.4 Learning (Knowledge Creation)

Knowledge is created by learning (Child *et al*, 2005). Polanyi (1966) states that "individuals have learning capability not organisations". Senge (2006), Stonehouse and Pemberton (1999), and Kamoche, (1997) support this view by addressing the belief that organisations learn because individuals learn. Within AKS, on the one hand, knowledge resources of all partners (experience, skill, etc.) are the materials of learning. On the other hand, individual's cognition controls the utilisation of these supplies in the learning process under the set of a collaborative frame.

Therefore, organisations in alliance networks as well as alliance organisations can acquire knowledge by facilitating individuals to learn, supporting them to utilise benefits of knowing in relevant job-tasks, and extracting the new knowledge from them into forms of knowledge materials which can be retained as knowledge of an organisation. That is, individual and organisational learning are the critical components which influence on attributes of alliance knowledge creation.

Under the view that characteristics of individual and organisational learning are parts of dynamics of AKM which is the aim of the investigation of this study, the issues on natures of learning, the principles of organisational learning, and the fundamental of inter-organisational learning are the centre of the discussion in this section.

2.2.4.1 Learning Psychology

Bhatt (1998) presents the perspective of managing organisational knowledge from managing knowledge of people in the organisation. It reaffirms to the notion that the individual is the source of tacit knowledge, which is the important input in creating organisational knowledge in more explicit forms (Senge, 2006; Kamoche, 1997; Polanyi, 1966). Hence, individual knowledge creation process should be embraced in strategic organisational knowledge management concern (both intra and inter-organisational levels).

In various aspects, the nature of individual learning is crucial for the study of organisational learning. Atkinson, Atkinson, Smith, and Hilgard (1996) explain the definition of learning that "it involves a relatively permanent change in behaviour that occurs as a result of previous practice or experience". Mckenna (2006) adds that learning can be only observed from a person's behaviour and drawing the inference from it.

Theoretically, classical and operant conditionings are the fundamental behaviour and cognitive science that relate to the management of individual learning in organisations (Huczynski and Buchanan, 2006; Arnold, Cooper, and Robertdon, 2005; Furnham, 2005; Ajzen, 1991). In the perspectives that behaviour and cognitive science are the complementary components, the applications of the two conditionings to the investigation in this research are in terms of:

- The principles of classical conditioning can help to pursue subconscious reactions towards learning stimuli.
- The principles of operant conditioning are another discipline for developing knowledge management policy.

Pavlov (1927) originates the classical conditioning from his study on an association of conditioned and unconditioned stimuli as patterns of behaviour in phenomena. The ***classical conditioning*** is subconscious stimulating in which a reflex action is less controllable by the individual owner of the action (Mckenna, 2006; Furnham, 2005). Hereby, in the case of individual's learning in organisation, the classical conditioning embraces the issues of emotional reactions, willingness to learn, value, and perception in learning (Arnold *et al*, 2005; Cook and Cook, 2005; Furnham, 2005).

According to the characteristics that individuals' responding behaviours can be controlled or deviated (Quinn, Anderson, and Finkelstein, 1996), individuals' learning in organisation is also related to the scope of "operant conditional learning". The ***operant conditioning*** is distinguished into two kinds of factors as reinforcement and punishment (Huczynski and Buchanan, 2006; Mckenna, 2006; Spence et al, 1956).

From the view of McKenna (2006), the basic connection between classic and operant conditioning is that learners must make some response before their behaviour is reinforced or rewarded. Therefore, when applied to organisational learning issues, it could be implied that classical conditioning is about factors regarding the natural reflexive responding behaviour while operant conditioning is the motivation factors.

The approach on inter-organisational learning requires the understanding on natures of individual learning as well as on the principles of organisational learning. Therefore, the issues of organisational learning will be discussed in the next section.

2.2.4.2 Organisational Learning

The patterns of learning process by Argyris (1976) can be utilised in approaching intra-organisational learning as well as inter-organisational learning. Argyris (2001, 1977b , and 1976) illustrates learning characteristics that lead to new knowledge creation in terms of single-loop and double-loop learning processes. Argyris and Schon (1996) define ***single-loop learning*** as a learning process that uses feedback to make continuous correction without questioning or altering the underlying values of the system. As for the ability to redefine organisations' underlying norms, policies, and objectives in learning process, they call it as ***double-loop learning*** (Ibid).

Senge (1992) reviews Argyris's learning frameworks by conceptualising single-loop learning as the process of ***adaptive learning*** (to cope with environmental change) and double-loop learning as the process of ***generative learning*** (focuses on continuous experimentation and improvement from feedback). Pemberton and Stonehouse (2000) develop the concept of learning about learning as another learning process beside Argyris's single-loop and double loop learning. They pinpoint that learning from what has been learnt would enable the organisation to shift its paradigm.

Theoretically, McKenna (2006), Zuber-Skerritt (2002) and Huber (1991) suggest a learning organisation must have a capability to facilitate the learning of all its employees and be alert to the need for continuous transformation. Pemberton and Stonehouse (2005) argue knowledge focused organisations must contain necessary learning facilitating factors in the issues of strategy, structure, infrastructure, leadership, culture, measurement, and individual knowledge.

The study of Parlby (2000) from KPMG (the global consulting firm) utilises the correspondence between knowledge journey benchmark criteria and the characteristics of organisational management to identify organisations' degrees of knowledge journey which can be related to the degrees of learning and sharing knowledge facilitation by management in organisation.

The criteria of knowledge journey benchmark on the management policy concerning people, process, content, and technology are presented in Table 2-4. According to the criteria, the degrees of KM application are divided into five types as knowledge chaotic, knowledge awareness, knowledge enable, knowledge managed, and knowledge centric (See Table 2-5).

Table 2-4: The Criteria of KPMG's Knowledge Journey Benchmarking

Criteria of KPMG's Knowledge Journey Benchmarking	
1. People	**2. Process**
1.1 Implement KM training/awareness	2.1 Benchmarking or auditing the current situation
1.2 Appointing K officer and creating K centres	2.2 Creating a KM strategy
1.3 Incentivising and rewarding knowledge working	2.3 Implementing new systems for communities of practice
1.4 Building and developing communities of practice	
1.5 Establishing formal KM networks	2.4 Designing other KM processes
3. Content	**4. Technology**
3.1 Creating a knowledge map	4.1 Carrying out a knowledge system audit or assessment
3.2 Implementing knowledge policies	4.2 Implementing ways to share best practice
3.3 Measuring intellectual capital	4.3 Use of KM software (e.g. Intranet or Groupware)

Source: From Parlby (2000, p.23)

The identification of knowledge management application degrees benefits managing knowledge and learning in terms of improvement indicators regarding knowledge activities' involvement. Nevertheless, organisation with the closer position to knowledge centric organisation needs efficient strategic implementation to be successful (Constructing Excellence, 2004; Payne and Sheehan, 2004; Pemberton and Stonehouse, 2004; Strojny, 2004). Hence, other than the characteristics of organisational management (on people, process, content, and technology) that flavour the activities regarding learning and sharing knowledge, the arrangement on these characteristics in terms of KM systems also underline the success of the organisation.

Table 2-5: KPMG's Degrees of KM Application

The Degrees of KM Application	The Descriptions	The Benchmark Conditions
1). Knowledge chaotic	The organisation doesn't have many processes and system for sharing knowledge and people are reluctant to share what they know.	3 or fewer of the criteria
2). Knowledge awareness	The organisation understands the importance of managing knowledge and has started to identify how knowledge is used and shared, but awareness and understanding of the issues vary across the firm.	4 or more, drawn from at least 2 sections
3). Knowledge enable	KM is beginning to benefit the organisation: procedures and tools are available, but there are still some problems.	6 or more, drawn from at least 3 sections
4). Knowledge managed	The framework and tools for KM are well established, technical and cultural problems have been solved and there is a KM strategy in place which is updated regularly.	More than 2 from each section
5). Knowledge centric	KM is central to the company mission and its value is measured and reported on.	All

Source: From Constructing Excellence (2004 p. 16) and Parlby (2004, p.22)

2.2.4.3 Inter-Organisational Learning

Effectiveness of alliance learning is, on the one hand, related to the different knowledge absorptive capability of partner organisations (Senge, 2006; Solomon, Surprenant, Czepiel, and Gutman, 1985). On the other hand, it embraces conditions

of alliance representatives (individuals), ICTs compatibility and quality, alliance supportive policy, structures of member organisations, learning culture of members as well as the group, and alliance stipulation (Das and Kumar, 2007; Maguire and Redman, 2007; Pemberton, Mavin and Stalker 2007; Hall, 2001; Stonehouse and Pemberton, 1999; Larsson *et al*, 1998).

Alliance between competitors is an opportunity to learn based on competitive partners' outperforming performances. The process of inter-organisational learning is by knowledge access (to learn about competitors) (Grant and Baden-Fuller, 2004), knowledge transfer (to learn from competitors) (Khamseh and Jolly, 2008; Soekijad and Andriessen, 2003), and jointly new knowledge creation (to learn with competitors) (Passfield, 2002).

To learn about, learn from, and learn with competitors, alliance partners have individuals as learning agents (Senge, 2006; Lajara, Lillo, and Sempere, 2003; Bhatt, 1998). Ultimately, the evolved system of organisational learning is jointly recreated by the complex relationship development of learning between individuals. Thus, the development of learning communities in knowledge systems influences and is influenced by the adjustment in learning patterns.

According to the studies of Das and Kumar (2007), Child *et al* (2005), Bontis *et al* (2002), Escriba-Esteve and Urra-Urbieta (2002), and Larsson *et al* (1998), inter-organisational learning depends on learning boundary (agreements), individual learning capability, transferring tacit knowledge to the explicit forms, managing explicit knowledge, trust, and collaborative environments that support new knowledge

creation. However, in inter-organisational learning, although it has some similar learning stipulations to intra-organisational learning (such as being individual dependent), it also has some distinct characteristics (such as semi formal or informal governance and learning scope based on agreements).

In learning processes, the dynamics of learning are forced by learning environments. Learning environments can facilitate or inhibit knowledge flow (Stonehouse *et al*, 2001). These effects exist in inter-organisational learning as indicated by inter-organisational learning theorists (Das, 2005; and Khanna *et al*, 1998; Larsson *et al*, 1998). Hereby, managing knowledge also challenges managing learning environments to enhance learning facilitation and minimise learning obstructing factors.

2.2.4 Culture, Structure, and Communication Infrastructure (Learning Environments)

Within alliances, although they are based on trust, devotion, and collective commitments, Khamseh and Jolly (2008) illustrate that not all knowledge is intended to be shared. Then, roles of managing knowledge facilitation and inhibition arise. Other than the underlined collaborative agreements, knowledge sharing environments influence on the quality and quantity of shared knowledge (Riege, 2005; Hall, 2001; Skyrme, 2001; Johnson, 1988). Regarding circulation of knowledge flow, Stonehouse and Pemberton (1999) determine critical basic elements of learning environments that

influence direction and management of organisation's knowledge flows as culture, structure, and communications infrastructure.

Based on inter-organisational perspective, particularly on competitive collaboration, influences of culture, structure, and communication infrastructure on knowledge flows between organisations are complex in terms of multi-characteristics derived from a number of individual parties in collaborative group (Hasgall and Shoham, 2008; Khanna, 1998; Gulati,1995).

2.2.5.1 Culture

In knowledge management, culture has influence on the direction as much as pattern of knowledge interaction behaviour between individuals (Cabri, Ferrari, and Leonado, 2004; Bhatt, 2001; Goffman, 1967). According to Huczynski and Buchanan (2006), culture includes values, beliefs, feelings, artifact, myths, symbols, metaphors and rituals, which taken together distinguish one organisation or group from others. Actually, AKM engages with managing differences, organisational principles and practices of partners. Therefore, culture and values in it are approached as factors of dynamics in AKM.

The definitions of culture are interestingly defined by the leading cultural scholars. Hofstede, Neuijen, Ohayv, and Sanders (1990) identify organisational culture as a holistic and anthropological related concept that is historically determined and socially constructed. The characteristics of culture in KM have been studied by a

number of theorists. Stonehouse and Pemberton (1999) specify culture as a learning barrier. Ordonez de Pablos (2004) determines culture as the key inhibitor of effective knowledge sharing. Moeller and Svahn (2004), Ford and Chan (2003), and Swierczek (1997) approach national culture as the critical variable of knowledge transfer. McDermott and O'Dell (2001) and De Long and Fahey (2000) centre their studies on organisational culture in knowledge sharing and incorporate it as a knowledge activity influencer.

Referring to Hofstede (1985), both national and organisational culture shapes the management characteristics in organisations. Under knowledge management discipline, the influences of national culture are on individual's knowledge activity processing and characteristics of organisational culture. In the case of organisational culture, it enforces individual's knowledge activity processing to be restricted by organisational norms. Nevertheless, in this study, the reviews on cultural issues are focused on frameworks that influence on individual's knowledge activity processing and inter-organisational practices.

In terms of the cultural influences on an individual's knowledge activity, the highlighted framework is related to values of knowledge encounters. Regarding this study, in which the focus of the investigation is of AKM dynamics in Thailand, Thai values that are related to organisational knowledge interactions will be reviewed.

Sathaporn (2006) and Rodsutti and Makayathorn (2005) elucidate that the distinct Thai values such as "Baramee" (charisma), "bunkhun" (gratefulness), "kraengchai" (considerate), and face-saving are the critical management issues in Thai

organisational management. Swierczek and Onishi (2003) and Swierczek (1997) conclude their study on managers' performance that Thai managers have low task achievement value. Komin (1999), (1990), (1978) and Komin and Smucdkarn (1979) studied work-related values in Thai organisations. They report from their studies with organisations in government and private sectors that there are nine value clusters (which are ranked by psychological importance from high to low) and these are the critical work-related values. The nine values are ego, grateful relationship, smooth interpersonal relationship, flexibility and adjustment, religio-psychical, education and competence, interdependence, fun-pleasure, and achievement-task orientations.

In the case of framework that influences inter-organisational practices, Hofstede (1993, 1985)'s framework on dimensions of organisational culture is relevant to multi-organisational culture, particularly, on the concept of individualism and collectivism. Ali, Lee, Hsieh, and Krishnan (2005), Hofstede (1993), Markus and Kitayama (1991), Triandis (1988), Diaz-Guerrero (1984) explain that ***individualism*** is a view in which individuals are supposed to take care of themselves only. As for ***collectivism***, Ali *et al* (2005), Williams (2003), Hofstede (1993), Hui (1988), Wagner and Moch (1986), and Bond, Leung, and Wan (1982) highlight the term as the attribute that encounters can expect their related parties to look after them, in exchange for unquestioning loyalty.

These frameworks correspond to the investigated issue on the principles of individuals' knowledge interaction and characteristics of relationship within alliance

networks. Hence, utilising them in the investigation is expected to provide the cultural related dynamics in AKM.

2.2.4.2 Structure

Cultural characteristics of an organisation are also derived from the pattern of organisational structure (Schein, 2004). Under the perspective of KM, organisational structure is a hierarchy of knowledge flow. Mintzberg (1983) introduces five basic elements of organisational structure which are composed of strategic apex, technostructure, middleline, operative core, and support staff. The characteristics of the five elements are about command in organisation (strategic apex), structure of communication (technostructure), and employee hierarchy (middleline, operative core, and support staff) (Mintzberg, Lampel, Quinn, and Ghoshal, 2003; Gould, 1999; Scott and Hogg, 1996). In application to the investigation on AKM, the review of the issues of leadership will be discussed below, whereas technostructure management will be discussed in the next section in terms of communication infrastructure (ICTs in managing knowledge).

The role of leader is crucial to the success of team (Robbins, 2001; Nurmi, 1996; Chrislip, Larson, and Parr, 1994). Leadership is an authority to control, direct, guide, motivate, punish, and manage subordinates (Sathaporn, 2006; Bloisi, Cook, and Hunsaker, 2003; Jones, Chonko, and Roberts, 2003; Johnson, 1998; Schein, 1992). In alliance context, Werther (1998) argues that alliance leader should not come from one of the partners and is not seen as a permanent executive.

In term of management styles, Lewin, Lippitt, and White (1939) propose three leadership styles on patterns of group behaviour (autocratic, democratic, and laissez-faire styles). ***Autocratic style*** contains directing characteristics. Leaders with this style always set the most details of the job-task before commanding it to followers. Most of decisions are made by the leaders. It is a style that highly centralises on leader. ***Democratic style*** allows followers to participate on the operating as well as decision making process. Within the group, this style has high social interaction between leaders and followers and also between followers. ***Laissez-faire style*** centres on delegation and empowerment. In this style, followers are trusted and allow organising, operating, and making decisions on their responsible jobs (Conger, 1988). In fact, the productive knowledge creation is also dependent on the compatibility between leadership styles and characteristics of subordinate in learning and sharing knowledge (Cook and Cook, 2005; Phornprapha, 2003; Nonaka *et al*, 2000; Noypayak and Speece, 1998; Savery, 1994). According to Noypayak and Speece (1998), they separate leader's motivation tactics into hard and soft methods.

As for the case of learning and sharing knowledge, Cook and Cook (2005) divide types of learning and sharing knowledge between individuals as intrinsic and extrinsic value. They define ***intrinsic value*** as "sharing knowledge and helping others for the sake of helping them" whereas ***extrinsic value*** is "sharing knowledge for some types of incentive". The drive of intrinsic value is related to the concept of moral in job-task operation by Santrock (1997). As for the approach on extrinsic value, although there are occasions when the right motivational disposition and supportive environment help to raise the level of performance (McKenna, 2006), Spence et al

(1956) state that increased motivation may cause a lowering of the level of performance in many situations.

However, the efficient organisational structure for knowledge transfer (which also contains the suitable leadership styles, the appropriate choices of control towards characteristics of subordinates) is dependent upon quality and compatibility of communication infrastructure (Passfield, 2002; Noypayak and Speece, 1998). Hereby, the next section features the review of the studies regarding roles and characteristics of communication infrastructure that can facilitate knowledge flow.

2.2.4.3 Communication Infrastructure

Under a socio-technical environment of managing knowledge in organisation, communication infrastructure is vital to the circulation of knowledge flow (Maguire and Redman, 2007; Grieves *et al*, 2006; Pemberton and Stonehouse, 2005; Waring, 2004; Smoliar, 2003). It directs quality and quantity of knowledge sharing (Fournier, Brocarei, Devogele, and Claramunt, 2003). It enables knowledge conversion processes as well as connects elements of knowledge system in organisation. In addition, it will have critical roles in other generations of the subject according to natures of learning and knowledge sharing that require communication infrastructure in distributing, storing, retrieving, and processing knowledge.

Jasimuddin *et al* (2005) determine the significance of communication infrastructure utilisation in codification and personalisation strategies of managing knowledge.

From their perspective, it can be implied that managing knowledge must focus on the correspondence and compatibility between communication infrastructure and human factors. There are a number of theorists who also agree on this notion. Maguire and Redman (2007) approach the role of human resources in information system design to maximise efficiency from utilising the system. Smoliar (2003) also holds views akin to Maguire and Redman by focusing on interaction management in leveraging social interaction by technological support. Divitini *et al* (1993) identify mechanisms to enhance individuals' capability through computer supported human to human communication in knowledge sharing context.

Yang, Liao, and Liu (2007) state that a successful alliance relationship requires a system that can efficiently support the interactions between the allied organisations. The compatibility of communication infrastructures between organisations in alliance networks can affect on the outcomes of alliance knowledge activities. That is, the compatibility of communication infrastructures can facilitate the flow of knowledge between organisations (Waring, 2004). However, the compatibility of communication infrastructures requires the trustable network maintenance as the privacy and confidentiality of the allied organisations are sensitive to relationships in alliance networks (Das, 2005; Holsapple, 2005). Therefore, quality of knowledge distribution in AKM requires accuracy, clearity, reliability, and entity in which are dependent on both intra and inter-organisational knowledge flow infrastructure (Yang *et al* 2007; Holsapple, 2005; Brown and Patinson, 1995).

From the review of KM theories in the sections above, it needs to be further discussed with the concepts of characteristics of strategic alliance and airline strategic alliance

for the primary research investigation. Then, the issues of strategic alliance, airline collaborative networks, and the aviation industry in Thailand are discussed in the next sections.

2.3 Strategic Alliances

Organisations collaborate with others when they want to achieve goals that could not have been achieved independently (Bamford *et al,* 2003; Lendrum 2000; Lei, 1993). Bleeke and Ernst (1993) specify the generic needs of organisations to be involved in collaboration as cash, leverage competition, skills, access to business and markets, or their combinations. Todeva and Knoke (2005) determine the characteristics of alliance formation into four levels as organisational, economic, strategic, and political. Notwithstanding these views, all possible benefits of alliance are always considered when organisations have to compare the benefits of individuality with the benefits of collaboration.

Strategic alliance provides a potential source of sustainable competitive advantage (Prahalad and Hamel, 1990). The creation of collaborative competitive advantage is emerged from exchanging critical resources including knowledge (Connell and Voola, 2007; Das and Kumar, 2007; Doz and Hamel, 1998). In fact, strategic alliance boosts the edge of the group and organisations within it by strengthening existing performances and developing collective competences (Khamseh and Jolly, 2008; Child *et al*, 2005; Alejandro and Jose Anastasio, 2002; Barney, 1991).

Theorists determine forms of cooperation upon different criteria. Dussuge and Garrette (1999) divide cooperation into two types as non-competing and competing organisations. They further specify the two types into forms in accordance with the main cooperative activities between organisations. Craven, Piercy, and Shipp (1996) classify the forms by the degree of collaboration and the environmental volatility. Lorange and Roos (1993) separate forms of cooperation based on degrees of integration. Collins and Doorley (1991) consider cooperation forms from objectives of partnership. The illustration on the determination on forms of cooperation between organisations by theorists is presented in Table 2-6.

From the presented forms of cooperation, some of them are concerned as strategic alliance. These forms are highlighted under the blue shade. Craven *et al* (1996) classify the form of flexible network as strategic alliance based on the characteristics of high degree in collaboration and high environmental volatility. Collins and Dooley (1991) account strategic partnerships as the form of strategic alliance according to the engaged strategic cooperative activity. According to the forms determination by Dussuge and Garrette (1999), the three forms of cooperation between competitors are relevant to the characteristics of strategic alliance of this study. Regarding the differentiation on cooperative forms by Lorange and Roos (1993), the form of formal cooperative venture corresponds to the aspects of strategic alliance in the airline industry.

Table 2- 6: The Cooperative Forms

Theorists	No. of Forms	Forms of Co-operation
1). Dussuge and Garrette (1999)	6 forms	**Between non-competing organisations** 1.1) International expansion 1.2) Vertical integration 1.3) Diversification **Between competing organisations** 1.4) Complementary alliances 1.5) Shared supply alliances 1.6) Quasi concentration alliances
2). Craven et al (1996)	4 forms	2.1) Virtual network 2.2) Flexible network 2.3) Value-added network 2.4) Hollow Network
3). Lorange and Roos (1993)	5 forms	3.1) Mergers and Acquisitions 3.2) Joint ownership 3.3) Joint venture 3.4) Formal cooperative venture 3.5) Informal cooperative venture
4). Collins and Dooley (1991)	6 forms	4.1) Strategic partnerships 4.2) R&D alliances 4.3) Relationship with suppliers. 4.4) Venture-capital-backed joint ventures 4.5)Value-added distribution alliances 4.6) Partial mergers.

Source: Configuring from Dussuge and Garrette (1999), Craven et al (1996), Lorange and Roos (1993), and Collins and Dooley (1991)

Hence, the selected number of cooperative forms descriptions by the theorists share characteristics of strategic alliance in this study. Practically, the presented forms of

cooperation that relate to characteristics of the strategic alliance are dynamic. That means the application of the cooperative forms to the investigation regarding strategic alliance need to embrace the considerations on industry natures, cooperative obligations, agreement, and relationship of partners (Child *et al*, 2005; Doz and Hamel, 1998; Glisson, Cunningham, Harris, and Lorenzo-Aiss, 1996; Khanna, 1998; Vyas, Shelburn, and Rogers, 1995). The next section will discuss distinct characteristics of airline strategic alliance in order to further specify these characteristics with cooperative frameworks.

2.4 Airline Strategic Alliances

Alliance is also ubiquitously utilised in gaining strategic and tactic competitive advantages in airline industry. In the scope of airlines' alliances, it can be divided into two categories concerning the operated routes between partners which are complementary and paralleled routes (Oum and Park, 1997). Hanlon (2000) elucidates that most alliances contain a mixing between complementary and parallel routes. Complementary (non-overlapped) routes can benefit partners in terms of seamless service networks, expansion of market courage without massive investment, and minimisation of barriers (slot allocation, local regulations, aviation rights, etc) in new markets. For parallel (overlapped) routes, the benefits are from strengthening the penetration in existing markets in terms cost, market share, and market power.

Doganis (2006) agrees with Porter (1990) and applies his concept on competitive advantage in approaching the airline industry that alliances are tools for extending and

reinforcing competitive advantage but rarely create it. Barber (1998), Inkpen (1998), and Larrson *et al* (1998) disagree by reassuring and stipulating in their studies that from joint-developed platform and learning together with partners, alliances are tools for creating competitive advantage if partners can maintain and sustain collaboration by continuous learning together.

From reviewing the studies about airline strategic alliances, the agenda in the face of competition has turned into a more intense direction based on challenges within the industry such as aviation regulations, pressures regarding raw materials, network competition, and technological development (Hanlon, 2007; Doganis, 2006; Kleymann and Seristo, 2004; Culpan, 2002; Morrish and Hamilton, 2002; Fan, Vigeant-Langlois, Geissler, Bosler, and Wilmking, 2001; Evans, 2001; Oum, Park, and Zhang, 2000). Albeit most literatures on airline strategic alliance approach with an economic perspective, the issue also reflects knowledge sharing perspective. Hence, those literatures are the significant grounds in terms of the nature of airline businesses and collaborative activities for the investigation on dynamics in AKM of this research project.

In the section on airlines' strategic alliance, the discussed issues are characteristics of airline alliances, airline alliance reviews (history, reasons, and lessons), and the airline industry in Thailand.

2.4.1 Characteristics of Airline Alliances

According to Contractor and Lorange (1988), alliance is a form of cooperation and often used to refer to a variety of inter-organisation partnerships. As this research is the study of the collaboration between airlines, the review on literature is focused on alliance with competitors. In terms of knowledge sharing, this kind of alliance is challenged on sharing familiar knowledge in different rhythms to develop a new knowledge for the same core business operation (Larsson *et al*, 1998; Hamel *et al*, 1989).

Practically, notwithstanding competitive sense in collaboration (Fenwick and Mcmillan, 2005; Larsson *et al*, 1998), alliance freezes competitive intensity among players within the group (Inkpen, 1998). To collaborate with competitors, it has a higher risk because business' competitors are collaborative friends as long as the collaboration lasts. Hence, if an alliance is broken down or affiliation is ended, those former partners take what they learn about, learn with, and learn from during period of collaboration for their future competitive strategy (Das and Kumar, 2007). Considering natures of collaboration, some business confidential and secrets have to be revealed (Child *et al*, 2005; Culpan, 2002; De-Wit and Meyer, 1994). Therefore, as similarly mentioned, counterparts have to focus on balancing what to share and what not to share while remaining and prolonging a good relation.

The complementary strengths of alliance partners create more value than derived independently (Culpan, 2002; Dussauge and Gamette, 1999; Child and Faulkner, 1998; Lorange and Roos, 1993). Perceiving strategic alliance as a learning

opportunity can render organisations to mutually develop a new knowledge in more effective and efficient way. Approaching the basic function of collaboration, alliance capabilities are devoted from partners' capabilities which are fundamentally derived from their knowledge (Khamseh and Jolly, 2008; Cimon, 2004; Escriba-Esteve and Urra-Urbieta, 2002). According to this concept, strategic alliance embraces knowledge sharing as the foundation of creating a greater value of joint performances.

Based on distinct characteristics of the airline industry which is capital intensive, technology oriented, sensitive to demand fluctuation, complex in flight operations (slot allocation, traffic rights, hub and spoke systems, etc.) critical in security and service standard, and has both national flag and private carriers, the movement of alliances in the industry is significantly related to strategic asymmetry of the group as well as potential threaten from others (Hanlon, 2007; Kleymann and Seristo, 2004; Boyd, 2001; Doganis, 1998). Under intensified competitive environments, restrictive regulations, limited slots, demand fluctuation, technological challenges, and an existence of airlines' global alliances networks, airlines that do not ally with others will be in a position of competitive disadvantage (Pitfield, 2007; Gudmundsson and Lechner, 2006; Botton, Hayness, and Stough, 1998; Dresner and Windle, 1996).

Escriba-Esteve and Urra-Urbieta (2002) concern agreements as the principals of collaborative learning between partner organisations. Doganis (2006 and 2001) reports that the majority of inter-airline agreements is essentially commercial in character and highlight on marketing and selling of passenger and cargo services. Technically, the agreements are in terms of prorate (fixed rates that an airline pays other members in alliance network for carrying the hired airline's passengers to

destinations of the other member airlines), code sharing (codes of operated airlines and of shared code airlines for the same flight), block spacing (to block seats for sales by the counterpart airlines), sharing airport facilities and rights, technological platform development, etc (Hanlon, 2007; Iatrou and Alamdari, 2005; Brueckner, 2003; Evans, 2001; Oum *et al*, 2000).

Details and chatacteristics of alliance agreements are related to partners' integration, their collective responsibilities, and scope of internal knowledge sharing within the group (Escriba-Esteve and Urra-Urbieta, 2002). The agreements that are frequently found in the airline industry are code sharing, block spacing, FFPs, joint purchasing, and franchising (Dogais, 2006; Kleymann and Seristo, 2004; Agusdinata and Klein, 2002).

Beyhoff (1995) identifies ***code sharing*** as an agreement in which airlines sell the seats of a flight of other carriers partly or wholly under their own name. The concept benefits airlines in term of economies of density. Furthermore, code sharing offers competitive advantage to member airlines against their competitors in the focus of CRS screen bias (multiple listing on screen).

Approaching to benefits from ***block spacing*** arrangement, its concept is similar to code sharing. The difference is seat limitation (Hanlon, 2007). Under this kind of arrangement, one airline allocates a block of seats on its flights to a partner. Benefits are derived in the form of economies of scale and density.

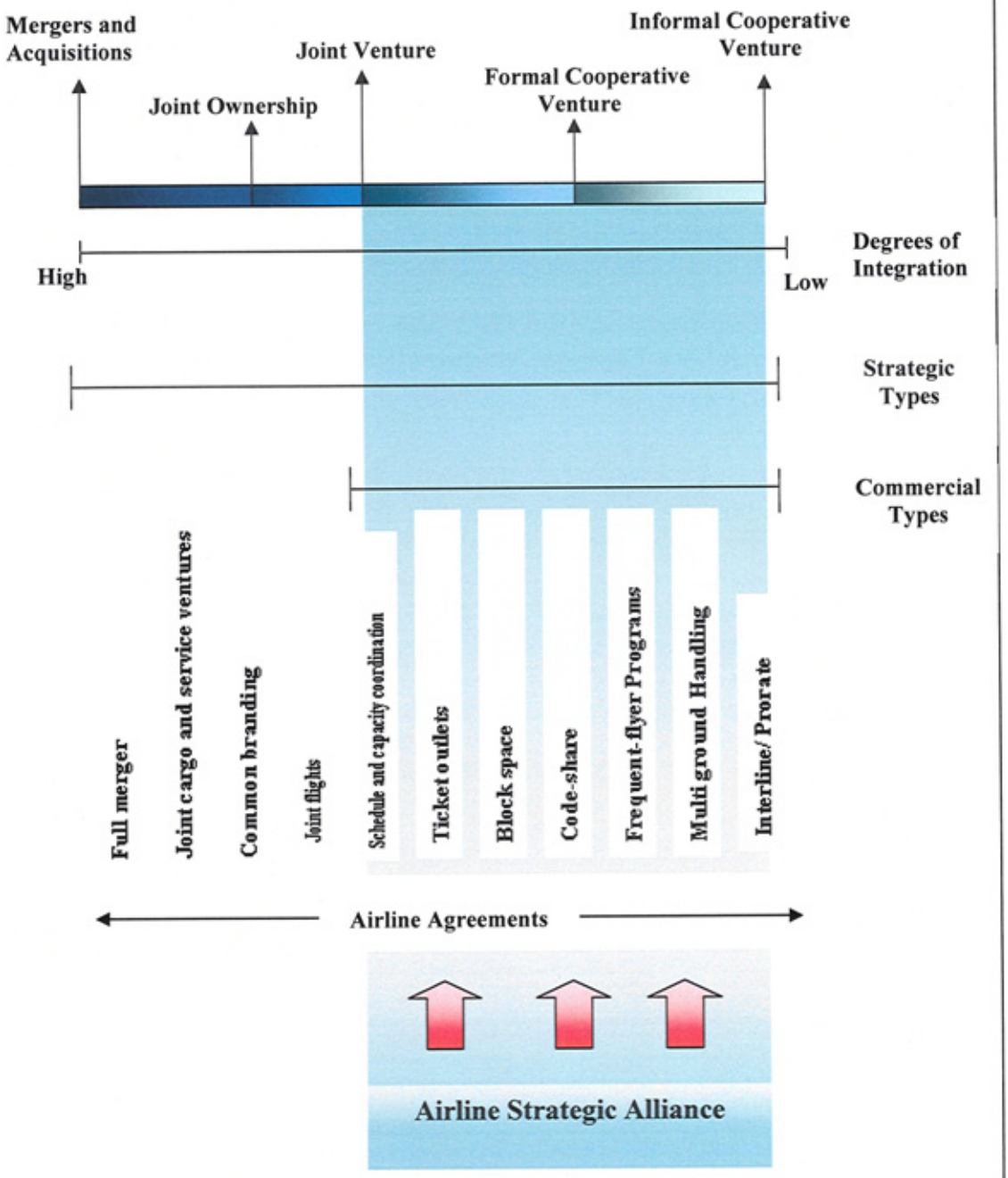
Airlines' alliances empower ***frequent flying programs*** by increasing passengers' choice of destination and frequency (Hanlon, 2002). Hence, it is a loyalty scheme that raises passengers by switching costs by making it relatively expensive in the side of lost rewards to transfer from one alliance group to another. Then, it benefits airlines in term of increase passengers' loyalty (Gilbert, 1996).

For ***joint purchasing***, it can be spread in many activities such as fuel and catering (Evans, 2001; Oum, Yu, and Zhang, 2001). These arrangements benefits airlines via increased purchasing power with suppliers and gain in economies of scale.

Franchising is another arrangement that provides airlines significant benefits. The notion of franchising is the practice of one airline permitting another to use its name, aircraft livery, uniforms, and brand image (Hanlon, 2007; Doganis, 2006). Then, the franchiser retains benefits via spreading its name more widely, operating services cost effectively, and increase traffic feed, particularly on thin routes. On the other hand, the franchisee benefits from the value of franchiser, employing franchiser's marketing and distribution expertise (Kleymann, 2005; Oum and Zhang, 2001).

Regarding the various types of collaborative agreements between airlines, the more collaborative activities from the more number of strategic agreements relate to the higher degree of integration in many cases (Lorange and Roos, 1993; Borys and Jemison, 1989). Figure 2-4 annotates types of alliance agreement and alliance integration degrees of airline strategic alliance.

Figure 2-4: Airline Strategic Alliance's Integration Degrees and Alliance Agreements



Source : Adapted from Doganis (2006), Kleymann and Seristo,2004, and Lorange and Roos (1993)

From the various types of airline agreement and the forms of cooperation, the focus according to the objective of this study is on strategic alliances. The main collaborative activities in airline strategic alliance are joint marketing, shared lounges, extensive code-sharing, coordinated schedule, frequent flyer program, joint purchasing, and fare planning (Hanlon, 2007; Doganis, 2006; Evans, 2001; Oum *et al*, 2001).

In the figure, the agreements that are mostly embraced in airline strategic alliance are highlighted in blue. Although a formal member of one strategic alliance cannot simultaneously be a formal member of another strategic alliance, airlines in alliance networks can cooperate with airlines outside their networks on tactical cooperative agreements (Fan *et al*, 2001). Hereby, referred to the presented agreements in the figure, some collaborative activities (such as code sharing and block spacing) between airlines within an alliance network are also cooperative activities with airlines outside the network. Furthermore, there are many types of alliances in the airline industry according to the focused collaborative objectives, joint activities, and degrees of integration such as strategic, route specific (multilateral and bilateral), regional alliances (Gudmundsson and Lechner, 2006; Agusdinata and Klein, 2002; Fan *et al*, 2001; Chan, 2000).

Ultimately, Doganis (2006) defines strategic alliances in airline industry as the collaborative agreements where the partners share their assets (such as terminal facilities, maintenance bases, aircraft, staff, traffic rights, and capital resources) in order to pursue a single or joint set of business objectives. In accordance with Iatrou and Alamdari (2005) and Agusdinata and Klein (2002), the leading airline alliance

networks, namely, Star Alliance, SkyTeam, and Oneworld are strategically collaborated. Nonetheless, degrees of strategic orientations are different between them, for example Star Alliance is oriented on integrated alliance from jointly but independent operations of members to the distinct collaborative activities of the group (Doganis, 2006).

From the studies by Kleymann and Seristo (2004) and Oum and Park (1997), airline alliances contain complex relationships because the collaborations involve relationship with subsidiary airlines of members in the group. Furthermore, although types of airline alliance can be differentiated by some dominated factors, characteristics of a type of airline alliances also contain characteristics in other types of airline alliances such as marketing alliances contain collaborative issues of strategic alliances. It is reflected from the embracement of various collaborative agreements, integration degrees between partners, and complex cooperation in airline alliances (Hanlon, 2007).

2.4.2 Review of Airline Alliances

The content on characteristics of airline alliances as presented in the former sections gives insight into natures and fundamental issues of collaboration which are also the areas to trace the issues of dynamics in AKM. Nevertheless, the facts from what has occurred in the airline industry in terms of collaborations would further extend the fundamental issues for utilising the airline industry as the investigated case.

In this section, therefore, the review of airline alliance literature is in the case of history, reasons, and lessons of airline alliances.

2.4.2.1 Airline Alliances History

The U.S. de-regulation of the airline industry into the hub and spoke system in airport networks in 1978 has intensified the competition and turned the industry to a collaborative era (Culpan, 2002; Chan, 2000). Trans-Atlantic alliances in the airline industry were advent in the late 1980s with the formations of the European Quality Alliance (Air France, SAS, and Swissair), the Global Excellence Alliance (Delta Airlines, Singapore Airlines, and Swissair), and the KLM/Northwest Airlines Alliance (Morrish and Hamilton, 2002).

The first international alliance was formed in 1986 between Air Florida and British Island to code-share on the London-Amsterdam route (Oum *et al*, 2000). Doganis (2006) points out that marketing alliances between Delta, Swissair, and Singapore Airlines in 1989 are the forerunners of the development of other global airline alliances.

In the period 1997 to 2004, many new airline alliances were formed while some old ones collapsed (Ibid) for instance, the formations of Wings in 1989 (the contract on alliance agreements was ended in 1999), Star Alliance in 1997, Oneworld in 1998, and SkyTeam in 2000 (Iatrou and Alamdari, 2005). Some airlines withdrew from their previous network or affiliated to other networks in accordance with the

suitability of global network expansion and equity linking reasons such as the affiliation of USAir in Star Alliance based on merger between United Airlines and US air (Gong, 2000; Marchand, 2000) and the affiliation of KLM in SkyTeam in 2003 based on the acquisition of KLM by Air France (Veldhuis, 2005).

In 2005 to the present, there are three major airline alliance networks (Star Alliance, SkyTeam, and Oneworld) that have been stronger and their numbers are extended from members of airlines in collapsed networks, airlines from the ended contract networks, airlines that withdraw from their partner networks, and stand alone airlines (Hanlon, 2007; Kleymann, 2005; Kleymann and Seristo, 2004).

On the one hand, the number of collaborative airlines has been significantly increased over the years. On the other hand, stand-alone airlines tend to be involved with the existing alliances rather than establishing new networks because major international airlines are involved in the existing alliances while new alliances would lack the substantial marketing presence that is vital for success ensuring (Evans, 2001).

Oum *et al* (2000) infer that global airline service networks are built by alliance groups of airlines residing in different continents. In terms of collaborative activities, global airline alliances have formed through various cooperative arrangements such as code sharing, block spacing, reciprocation on frequent flyer programmes, joint marketing programmes, joint human resource allocations, shared lounges and ground handling services, pooling purchasing, etc as mentioned in the previous sections (Hanlon, 2007; Kleymann and Seristo, 2004; Doganis, 2001). The review of facts of airline alliance

networks in this study focusses on the major three networks. They are Star Alliance, Oneworld, Sky Team.

Table 2-7 illustrates the member airlines of the three major alliances in 2008. However, there are other three networks that are currently disintegrated (Qualiflyer, Wings, and Global Wings Alliances) but their former members have affiliated to the recent three major groups. The discussions regarding the other three disintegrated alliances are also detailed to illustrate the movement of airline alliances. Hence, the paragraphs below provide the facts of six airline alliance networks; Star Alliance, Sky Team, Oneworld, Qualiflyer, Wings, and Global Wings Alliances.

Star Alliance was formed in May, 1997 by five carriers (TG update, 2002; Marchand, 2000). They are Air Canada, United Airlines, Lufthansa, Scandinavian Airlines System, and Thai Airways International. Between 1997-2003, the number of STAR's members has changed to fourteen. In 2008, the group has nineteen main members in which offer eighteen additional airlines under their subsidiaries (Thai International Airways, 2007). The mission of the STAR is to provide customer the benefits of global reach and a smooth travel experience (Bunjoungmanee, 2001).

Sky Team was established on June, 2000 by Air France, AeroMexico, Delta Airlines, and Korean Airlines (URL2). CSA Czech Airlines became a member of Sky Team in 2001. In total, there are twelve main members in which contain sixteen subsidiary airlines in 2008. Sky Team was formed later and has fewer members than STAR. The group sees the STAR as its only real competition (Culpan, 2002).

Table 2-7: Airlines in Alliance Networks in 2008

Airline Alliance Networks	Members in 2008	Members that Operate in Thailand
1. Star Alliance	*19 airlines:* Air Canada, Air China, Air New Zealand, All Nippon Airways, Asiana Airlines, Austrian Airlines, British Midland, LOT, Lufthansa, Scandinavian Airlines Systems, Shanghai Airlines, Singapore Airlines, South African Airways, Spanair, Swiss International Air Lines, TAP Portugal, Thai International Airways, United Airlines, and US Airways	*10 airlines*: Air China, All Nippon Airways, Asiana Airlines, Austrian Airlines, Lufthansa, Scandinavian Airlines Systems, Singapore Airlines, Swiss International Air Lines, Thai International Airways, and United Airlines
2. Sky Team	*12 airlines*: Aeroflot, AeroMexico, Air France, Alitalia, China Airlines, China Southern Airlines, Continental Airlines, Czech Airlines, Delta Air Lines, KLM Korean Airlines, and Northwest Airlines	*8 airlines*: Aeroflot, Air France, Alitalia, China Airlines, China Southern Airlines, KLM, Korean Airlines, and Northwest Airlines
3. Oneworld	*10 airlines*: American Airlines, British Airways, Cathay Pacific, Finnair, Iberia, Japan Airlines, Lanchile, Mal'ev Hungarian Airlines, Quantus Airways, and Royal Jordanian Airlines	*7 airlines*: British Airways, Cathay Pacific, Finnair, Japan Airlines, and Mal'ev Hungarian Airlines, Quantus Airways, and Royal Jordanian Airlines

Source: Complied from: Air-Sea Guide (2008), Airprot of Thailand Annual Report 2007, Culpan (2002), Evans (2001), Oum et al (2000)

As for ***Oneworld***, five foundation members (in which are American Airlines, British Airways, Canadian Airline, Cathay Pacific, and Quantus) launched the group in February 1999, (URL3). In 2000, Canadian Airlines left Oneworld to join STAR according the force by Canadian government (Fan *et al*, 2001; Oum and Zhang,

2001). In 2008, Oneworld consists of ten main members which provide more than 30 additional subsidiary airlines to the network (URL3).

In the case of ***Qualiflyer***, it used to be another leading alliance, particularly in Europe. The group was founded in March 1998 (Chanpayom, 2003). It had eleven members including Air Europe, Air Littoral, AOM French Airlines, Crossair, LOT Polish Airlines, PGA Portugalia Airlines, Sabena, Swissair, TAP Air Portugal, Turkish Airlines, and Volare Airlines.

Swissair was the leader and the initiator of the group. Therefore, the collapse of Swissair in 2002 affected the survival of the group (Knorr and Arndt, 2004). PGA Portugaua Airlines and Turkish Airline withdrawn from the group while Swissair and Crossair brands stopped their operation on March 2002 and were replaced from April the same year by SWISS (Gudmundsson and lechner, 2006; Kleymann and Seristo, 2004). Before the dissolution, Qualiflyer has 3 member airlines involving SWISS, SN Brussels (used to be known as Sabena), and TAP Air Portugal (Agusdinata and Klein, 2002).

Another disintegrated airline alliance network is ***Wings Alliance***. It was established in 1989 and had KLM, and Northwest Airlines as the founder members (Iatrou and Alamdari, 2005). KLM and Northwest had integrated their services closely via rationalising their flight networks, linking FFPs, sharing airport lounges, etc. (Northwest's Annual Report 1994). Continental joined the group in January, 1999 (Evans, 2001). Alitalia was under the proposed of this alliance before it joined the Sky Team Alliance at the end of Autumn 2001 (URL 4). Later, the agreements of the

group ended and members affiliated to other leading alliances. Presently, Continental Airlines, KLM, and Northwest are the members of SkyTeam.

For ***Global Wings Alliance***, it had six airlines in its group before the disintegration. They were Druk Air, Iraqi Airways, Lao Aviation, Libyan Arab Airlines, Oceanic Airlines, Pan Am (URL 5). The mission of the group was to better meet the needs of frequent international travelers and provide the best service possible (Ibid).

From the history and movement of alliance networks as well as airlines' affiliation presented in this section, the reviewing literature on airline alliance will be approached on reasons in collaboration and lessons from alliances in airline industry to be the background for the investigation processes.

2.4.2.2 Airline Alliance Motives

From the history of airline alliances, the establishment and affiliation are related with reasons in collaboration of airlines and strategic asymmetry of alliance networks. The underlying reasons that motivate carriers to form or join an alliance embrace many issues in which basically concern the opportunity for greater benefits.

According to Hanlon (2007), Kleymann and Seristo (2004), Hamilton and Morrish (2002), Doganis, (2001) and Oum *et al* (2000), the reasons can be categorised into four motives of airlines' alliances based on natures and scope of airline business. The four motives are market, cost, regulatory, and competitive motives.

Market Motives

The market motives consist of factors that corresponding to passengers' needs and market places conditions. Hanlon (2007) specifies that an alliance can provide seamless service networks which can increase service quality in terms of frequency, ease of connection, reduced probability of lost baggage, minimised waiting time, and decrease in transfer delays.

The existence of the globalisation of the market place derives an importance of more destination coverage (Botton *et al*, 1998; Dresner and Windle, 1996). Therefore, the larger the networks and the more destination, the higher opportunity that a carrier will be more popular. Profoundly, the market motives are to energise service quality in order to increase passenger satisfaction. Stonehouse and Pemberton (1999) state that organisations can gain benefit from focusing on the perceived value of customer. This principle is also captured by airlines which is reflected from their strategic movement via such collaboration to respond to the market motive (Doganis, 2006).

Cost Motives

For cost motives, alliance can facilitate economies of scale, scope, and density (Porter, 1998). Thayer (1994) contends that the concept of the strategic alliance is rooted in the notion that complementary partners can achieve economies of scale and density via seamless networks coverage. Kleymann and Seristo (2004) argue that as airlines services have a range of fixed costs rather than fixed cost per service unit,

economy of density is the fundamental concern for airlines. Nevertheless, parallel partners can achieve economies of scope by shared facilities, joint purchasing, pooling ground services and handing (Hanlon, 2007; Evans, 2001).

Moreover, larger alliance networks can gain the scope of economy in terms of loyalty marketing schemes, advertising, and CRSs. Economies of density arise because greater density enables airlines to use larger, more efficient aircraft with lower costs per seat-mile and/or to operate at higher service frequencies and consequently at higher seat-load factors, which lead to lower costs per passenger-mile (Hanlon, 2000).

Regulatory Motives

In the airline industry, there are regulations from international aviation organisations (6 aviation freedoms, 16 annexes from ICAO, etc.) and local governments (liberalisation, bilateral and multilateral agreements, etc.) that airlines must confront in strategising business movements (Balfour, 2004; Fan *et al*, 2001; Oum *et al*, 2001; Chan, 2000). Being a member of an alliance can help carriers to identify the suitable solutions for a particular regulation. Aviation rights for instance, in major hubs within a high density of air transport cities, slots are always desired and unavailable (Hanlon, 2007). Then, cooperative agreement to use unemployed or not full capacity utilisation of partners' aviation rights in the alliance can be the way out.

Competitive Motives

Competitive motives are vital accelerators for airline alliances. Apart from reacting to competitors' alliance formations, advantages from networks marketing programmes such as FFP, increased number of fleet, network expansion, CRS display bias, and increased market share and market power from parallel routes are major motives (Kleymann, 2005, Culpan, 2002; Barber,1998; Oum and Park, 1997).

From the four main motives above, in accordance with the studies of Iatrou and Alamdari (2005) and Fan *et al* (2001), several airlines in many alliance networks are still gratified in their shared benefits while a large number of airlines in other alliance networks have ended their integrations according to management difficulties and/or differences of requirements and interests among member airlines. Table 2-8 illustrates benefits of alliance according to types of alliance and cooperative arrangements.

Although different organisations have different competitive edges, Hamel (1991) states counterparts in competitive alliance always contain related competences. Then, due to the fact that knowledge sharing is a process of all alliances sharing capabilities, other than understanding conditions and situations of an organisation itself, it is crucial to know what benefits from learning an alliance offers and whether these benefits fulfill and are compatible with its status in which way (Doganis, 2006 and 2001).

Table 2-8: Benefits of Airline Alliances

Types of Airline Alliances and Cooperative Agreements	Benefits
1. Types of alliance by route based	***Complementary routes:*** Seamless service networks, save cost of physical investment, minimise barriers in new markets. ***Parallel Routes:*** Gain market share and increase market power.
2. Types of alliance by equity involved	***Equity:*** Ability to access each other's route network and cross border operation. ***Non-equity:*** Reduce risk and cost when withdraw from an alliance while retain other benefits of the group.
3. Code sharing arrangements	CRS screen bias, economies of scale and density.
4. Block spacing arrangements	Economies of scale and density.
5. FFP arrangements	Increase passengers' loyalty.
6. Joint purchasing arrangements	Economies of scale and increase purchasing power.
7. Joint technological development	Economic of scale and scope, increase competitive edge for partners and the group, and increase collaborative efficiency.
8. Franchising	Spread brand name, economies of scale and scope.

Source: Complied from Hanlon (2007 and 2002), Doganis (2006 and 2001), Kleymann and Seristo (2004), and Evans (2001)

2.4.2.3 Airline Alliance Lessons

Strategic alliance is a mechanism of organisational learning (Dodgson, 1993; Hamel, 1991). Acceptable learning benefits of an individual partner might involve diluted benefits or even some loss in the short run but it will provide a greater benefit for the group which pays back that partner in the long run. In practice, the sustainability of alliance is grounded on acceptable reciprocal benefits including learning (Morrish and Hamilton, 2002; Evans, 2001; Howarth and Kirsebom, 2000; Doz and Hamel, 1998; Senge, 1990; Argyris, 1976).

Collaborative arrangement has limits and it is just another form of competition (Hamel *et al*, 1989). According to alliance natures, all partners' independence is reduced and they have to reveal business secrets. Although it will provide a greater benefit for the group in terms of greater pay back to that partner or in other forms of benefits, it could create tension and lead to reconsideration of members' affiliation (Kale *et al*, 2000; Doz and Hamel, 1998; De-Wit and Meyer, 1994).

Doganis (2006) argues that combining weak airlines is unlikely to create a strong competitor and this is the reason that alliances with weak partners fail in long term. Knorr and Arndt (2004), Chan (2001), and Fan *et al* (2001)'s studies add viewpoints in terms of control from government and regulations that also crucially affect the stability of airline alliances. Then, the disintegration of airline alliance is from external and internal forces.

The ***external forces***, as such political issues historically occurred with state owned airlines (Knorr and Arndt, 2004) and were competition driven in terms of competitions between networks (Evans, 2001). On the other hand, the ***internal forces*** frequently occur based on changes, economic, and competitive reasons within the group (Hanlon, 2007; Doganis, 2006; Evans, 2001; Chan, 2000; Oum and Park, 1997). From the described characteristics, external forces are less likely and internal forces are more controllable by effective and suitable alliance management.

From reviewing the articles, major reasons of alliance failure are in terms of broad objectives, asymmetry of benefits versus expectations, network instability, strategic incompatibility, differing product and service standards, trust, and operational problems (Iatrou and Alamdari, 2005; Knorr and Arndt, 2004; Agusdinata and Klein, 2002; De Man, 2002; Suen, 2002; Chan, 2000; Nunes, Farago, and Travis, 1997). Some of the non-continued alliance cases are discussed below.

The lesson from the disintegration of Qualifier Alliance (which was founded and led by SwissAir) is from utilising too ambitious an alliance strategy. SwissAir had very high operation costs and limited potential of its home market population, and the airlines choose to focus on equity-based alliances and heavily diversifying to non-aviation business (Knorr and Arndt, 2004; Suen, 2002). When the airline collapsed, the alliances that led by the airlines also collapsed.

The case of the non-continuity of Wings Alliance (Continental Airlines, KLM, and Northwest Airlines) is another instance. The co-decision to not prolong the agreements at the end of their ten year contract on collaboration is from the evaluation

on the situations of alliance networks in the industry, the performance of the group, and the opportunity in the future (Veldhuis, 2005; Oum and Zhang, 2001). Nevertheless, at present, airlines in the Wings Alliance have joined Sky Team.

Moreover, airline partnership movements in alliance networks and the objections on affiliated proposals are also the lessons for future alliance strategy. The exemplified cases are Thai Airways decline of SwissAir's collaborative offer from the un-asymmetry of benefit (Knorr and Arndt, 2004), Canadian Airlines moved from Oneworld based on the consolidation between Air Canada and Canadian Airlines (Oum and Zhang, 2001), airlines in China considered the affiliations with alliance networks on the offers that were compatible with Chinese aviation restrictions and the potential benefits as such the case of the affiliation Air China in Star Alliance (Zhang and Round, 2008; URL1), Finnair and SAS are the members of the different alliance networks (Oneworld and Star Alliance, orderly) which could give leverage to the multilateral strategy between networks in this region (Gudmundsson and Lechner, 2006), and Singapore Airlines decided to join Star Alliance and turned down the offers by Sky Team (Agusdinata and Klein, 2002).

However, in considering the cases presented, alliances may last and still be unsuccessful on learning missions (Das and Kumar, 2007; Cimon, 2004; Hamel, 1991). Nevertheless, alliance stability, asymmetry, and compatibility are related to learning synergies in terms of balancing learning systems and ability to overcome the learning obstructions (Dussauge *et al*, 2000; Doz and Hamel, 1998; Inkpen and Beamish, 1997). Therefore, it is crucial for alliance networks to gain success in affiliation continuity as well as in learning.

Hereby, under the learning perspective, partners should realise and aim for developing their learning capability as much as developing new knowledge to reduce failure opportunity of their collaboration. To achieve these learning missions, the understanding from investigation on dynamics in AKS of this research is expected to give insight to the specific direction and solution to sustain competitive advantages of the groups and airline counterparts.

2.4.3 Thai Aviation

The Airline Industry has distinct characteristic. It is a capital intensive, technology oriented, sensitive to demand fluctuation, complex in flight operations (slot allocation, traffic rights, hub and spoke systems, etc.) homogeneous and extremely intense in competition both between airlines and between collaborative groups. The airline business has much higher fixed costs in comparison to variable cost as well as high proximity in the proportion structure between revenue and expenditure (Doganis, 1998; Gillen, Oum, and Tretheway, 1985). Notwithstanding these distinct characteristics, in different countries/regions, there are levels of aviation infrastructures, the adopted technologies, resources, and regulations to confront with.

The aviation industry in Thailand has long been highly controlled by national authorities, bilateral and multilateral agreements which have controlled market access and limited competition. From reviewing articles, collaborations of airline businesses in Thailand have to engage with a number of local aviation service organisations (Airport of Thailand, 2007; 90 years Thailand Ministry of Transport, 2002; Narapong,

2001). Table 2-9 illustrates the major local aviation related organisations and their relations with airlines.

Table 2-9: Aviation Related Organisations for Commercial Transport in Thailand

The Organisations	Relations with Airlines
1). The Department of Civil Aviation	Aviation regulations and supervision
2). Airports of Thailand Plc., Ltd. (AOT)	Airport facility services
3). Aeronautical Radio of Thailand Co., Ltd.	Aeronautical radio services
4). Thai Airport Ground Services Co., Ltd. (TAGS)	Ground services
5). Thai Aviation Fuel Co., Ltd.	Fuel supply
6). Bangkok Aviation Fuel Services Plc., Ltd.	Fuel supply services
7). Thai International Airlines	Domestic flight connection and catering services

Sources: Configured from 90 years Thailand Ministry of Transport (2002)

From the list of the organisations in the table, these organisations relate to airline business in the aspects of service, infrastructure, and regulations. Obligations and operations of these organisations have crucial influences towards the limitation and potential of cooperation of airlines in alliance networks. On the issue of airlines' expenditure regarding aviation services in Thailand, airlines made direct and indirect

payments to AOT (Airports of Thailand Plc., Ltd.). This is because the organisations that provide aviation services are subsidiaries of or get concessions from AOT.

In the case of services which supplied from local aviation-related organisations, airlines in alliance networks have a potential to establish a pool-purchase which provide purchasing power to them (Hanlon, 2007; Evans, 2001; Oum *et al*, 2000). Although aviation supplying services in Thailand have very limited competition and some are monopolistic businesses by government agencies, the gathering of airlines could enhance their power of negotiation (Doganis, 1998; Mekvichai, 1998). It can be illustrated from the case of Star Alliance that has Thai International Airlines to be the hub airlines of the group in Thailand (Bunjoungmanee, 2001). Members of Star Alliance would gain some benefits from the privileges of Thai International Airlines as the national airline of Thailand such as the location of Star Alliance lounge and the seamless service on connection flights to the domestic destinations.

At Suvarnabhumi airport, Thai International Airlines has six main obligations (Thai International Airways, 2006). These are airline business, aircraft maintenance services, courier-posting services, airport gates and ground instrument services, customer services, and catering. The later five obligations are also the services for other airlines. Then, not only airlines in Star Alliance but also airlines in other collaborative groups cooperate with Thai International Airlines. In many business activities such as check through of luggage and code sharing, airlines in Star Alliance and other collaborative groups have the similar cooperation with Thai International Airlines. However, their relations with Thai International Airlines whether

collaborator or customer are set by agreements, and the details of cooperation are different.

In terms of aviation distribution infrastructure, Thailand has thirty-five airports that are engaged with scheduled service of commercial airlines (AOT's Statistical Reports, 2006). Twenty-nine of them are domestic airports which are under the supervision of the Department of Civil Aviation (Technical Division, 2005; 90 Years Thailand Ministry of Transport, 2002). Six of them are international airports which are under the supervision of Airports of Thailand Public Company Limited (this was known as the Airport Authority of Thailand, privatized in 2002) (Airport of Thailand, 2007). The six international airports are located at Samutprakarn (Suvarnabhumi airport), Bangkok (Don Mueang airport), Chang-Mai, Hat-Yai, Phuket, and Chiang-Rai.

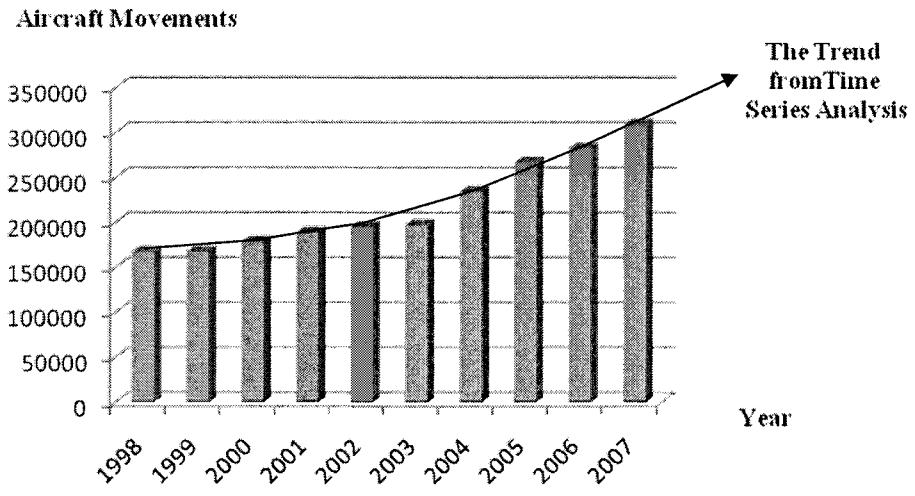
In 2007, there were 92 scheduled airlines operated in Thailand (Ibid). Table 2-10 presents the movements on the amount of annual international flight passengers, the number of scheduled airlines, and the number of international flights between 2002 and 2007. These figures are expected to be increased according to the growth of air transport demand in South-East Asia, Thailand as the popular tourist destination, and the development of aviation infrastructures (Airport Thai, 2007a; Lilavivat, 2005; Narapong, 2001).

Table 2-10: The Movements on Amount of International Passengers, Airlines, and Flights between 2002 and 2007 in Thailand

Years	The Amount of Annual International Flight Passengers	The Number of Scheduled Airlines	The Number of International Flights
2007	32,200,696 people	92 airlines	215,243 flights
2006	32,887,806 people	102 airlines	200,287 flights
2005	29,906,734 people	94 airlines	193,688 flights
2004	29,116,104 people	91 airlines	180,745 flights
2003	24,223,974 people	79 airlines	153,277 flights
2002	25,579,439 people	84 airlines	154,347 flights

Source: Configured from AOT's annual reports, 2002 (p.22), 2003 (p.22), 2004 (p.24), 2005 (p.40), 2006 (p.43), 2007 (p.55)

Figure 2-5: Aircraft Movements at Suvarnabhumi and Don Mueang Airport (Including International and Domestic Flights)



Source: Airport Of Thailand's Annual Report 200", p. 120.

Most of the international airlines that operated in Thailand are based at Suvarnabhumi airport (Airport of Thailand, 2007). The ten year records of aircraft movements at Suvarnabhumi and Don Mueang airport is presented in Figure 2-5. By approaching this record with time series analysis, the trend in expanding the amount of aircraft movements in the future should be increased and provide the potential for airlines collaborative activities.

Moreover, in accordance with the open sky schemes to other local airlines other than Thai International Airlines (Lilavivat, 2005), the cooperation between airline alliance networks and local airlines is anticipated to enhance air transportation in the same direction with the growing of Thailand's in-bound tourism (Thai International Airlines, 2006).

Regarding technological infrastructure, AIMS (airport information management system) is the core technological system that is utilised at Suvarnabhumi airport (Ibid). The system is the real time interactive and internet base that integrated with forty-five sub systems such as AODB (Airport Operations Database), AOC (Airport Operation Centre), and On-line Ticketing & Check-in (Airport Thai, 2007b). On the one hand, the utilised technological infrastructure at Suvarnabhumi airport is selected from the advanced and well known platforms that are in used in the leading airports of the world (Sundaravej and Siriwan, 2005). On the other hand, the joint development of technological platforms of the collaborative airlines for business in Thailand should be concerned with the compatibility and correspondence with the existing level of this infrastructure at the main airports of Thailand.

The airline business and collaboration between airlines must be operated under international and domestic aviation regulations. Presently, the important international aviation regulations are launched from International Civil Aviation Organisation (ICAO) and International Air Transport Association (IATA). Nevertheless, the existing international regulations are developed from a number of critical regulations in the past such as Paris Convention 1919 (the Convention on the Regulation of Air Navigation), Habana Convention 1928 (the Convention on Commercial Aviation), and the US airline industry deregulation in 1978 (Gong, 2007; Oun *et al*, 2001; Chan, 2000). These regulations have critical roles towards alliance networks in terms of the authority to restore the competitive balance when anti competition effects are arisen from alliance activities (Agusdinata and Klein, 2002).

The main aviation regulation of Thailand is Air Navigation Act B.E. 2497 (Vichailuck and Vichailuck, 1982). This Air Navigation Act B.E. 2497 is rooted from the Paris convention of 1919 (Piputawat, 2000; Napetapat, 1999). The critical contents are in the main nine issues which are civil aviation board, general provisions regarding aircraft, registration and markings of aircraft, certificate of air worthiness, journey log book, operating personnel, airports and aircraft navigation facilitation equipment (airport tariffs and technical services), accidents, and authority to examine-hold-delay, penalties. Other than the Air Navigation Act, the domestic aviation regulations that influence the operations of international airlines in Thailand are the Freedom of Air and bilateral-multilateral agreements. In 2006, Thailand had ninety-eight agreements with ninety-five countries (Transport Newspaper, 2006).

Thai aviation restrictions are corresponded with the international aviation regulations but contain the additional specific details to comply with sovereignty and aviation policies of the country (Piputawat, 2000). The control of aviation regulations towards collaborative activities can be illustrated from the instances of the dispute in the past in the cases of anti-competition via Central Reservation Systems (Pemberton *et al*, 2001; Stonehouse *et al*, 2001; Barber, 1998) and unrevealed detail of code-sharing (Brueckner, 2003; Dresner and Windle, 1996; Hannegan and Mulvey, 1995).

Another example is the case from the benefit of collaboration between airlines to provide the opportunity in achieving global expansion beyond bilateral agreement. However, the opportunity is depended on local restrictions whether the granted traffic rights are allowed to be transferred to partners (Agusdinata and Klein, 2002; Stragier, 1999).

Hereby, the opportunities from collaboration and further cooperative activities in airline alliance networks are emerged from and challenged by the movements of international and local regulations as well as other aviation factors.

2.5 Summary

The discussions in Chapter 2 have engaged with a number of disciplines in behavioural, psychological, and sociological schools of organisational management. Based on the research objective which is "to identify dynamics in AKM", the

reviewed literature comprises the relevant frameworks, concepts, and theories of KM and strategic alliance subjects. The issued on which the review focused are:

- Characteristics of AKM
- Factors in managing knowledge (learning system, input-output factor, learning process, knowledge creation, and learning environments)
- Characteristics of strategic alliance and airline alliance networks
- The aspects of Thai aviation

From the reviewed literature, AKM is set by the agreement of alliance networks, the degree of collaboration, and the setting of particular business environment (Escriba-Esteve. and Urra-Urbieta, 2002) and Inkpen, 1998). Organisations ally to each other to seek the greater competitive advantage than from the stand alone operation. Then, elements in knowledge systems, natures of learning, characteristics of knowledge transformation, and influences from environments affect the creation of knowledge-based collaborative competitive advantage.

The literature on KM provides the various fundamental aspects of learning and knowledge sharing. In the case of the study on AKM, some characteristics of the alliance system that affect knowledge flow have been discussed. However, these require a study to configure, correlate, and comprehend the critical components in managing alliance knowledge (such as factors, their roles, and relationships between them) to identify the dynamics in AKM and many characteristics from relating these dynamics together. In addition, as for the studies regarding airline alliance, most literature pays attention to operative benefits, tension, collaborative activities, and

environmental movements in the industry but none of them is entirely devoted to the perspective of KM. The gap provides an opportunity for this study to develop a conceptual model to increase the understanding of AKM through the case of the airline industry.

Critically, the literature review has identified many gaps in the airline alliance KM research literature, particularly in terms of the dynamics and processes of knowledge sharing and transfer. Specifically, the reviewed literature according to the research objective indicates the research gaps in terms of factors and characteristics of dynamics in AKM, roles of the dynamics in AKS, relations between these dynamics in alliance knowledge transfer, and the influences of these dynamics in synergistic knowledge creation.

From these research bases (research objective, the reviewing literature, and the identified research gaps), the next chapter discusses research methodological issues; the related ontology and epistemology, the utilised methodology, research design and research methods.

Chapter 3

Research Methodology

> *"Mixed-method studies are not mixtures of paradigms of inquiry per se, but rather paradigms are reflected in what techniques researchers choose to combine, and how and why they desire to combine them."*
>
> *Sandelowski (2000, p.246-247)*

3.1 Introduction

The purpose of this chapter is to present and discuss the research methodology utilised in the investigation process. The statement by Sandelowski (2000) above generates the similar direction of identifying research methodology as undertaken in this doctoral study by focusing on the practices in the development of the research. Regarding the objective of this study in understanding on the dynamics of AKM, methodological arrangement assists the investigation to gain knowledge on what alliance partners can learn, how they learn, and how the learning happens. This chapter contains five main issues concerning research methodology. They are presented in the sections of research paradigm, research methods, primary research arrangement, reliability and validity, and ethical issues.

Research paradigm is discussed as a reflected ground of research method selection. The concept of social constructionism is the basis of the research philosophy of this research

project. Herein, the focus is on constructing the meaningful reality from the evidence on knowledge sharing between airlines to further identify issues in dynamics of AKM (which is the main objective of this study). The techniques and processes utilised in the investigation are explained in the section on research methods. Engaging with the multi-method strategy results in triangulation in terms of utilising the different methods in different connected phases.

In the section of primary research arrangement, the multi-method investigation processes are set in the three phases of gathering data. As for the analysis, qualitative data is analysed by a discourse analysis technique whereas quantitative data is processed by statistical tests. Hence, from the interviews with organisations in the airline industry (airlines, airline alliance networks, and government agencies that are relevant to airline industry) in Phase ,1 in order to gain the initial understanding on knowledge sharing activities in the airline industry, the data is analysed by a discourse analysis technique. As for Phase 2, the questionnaire survey is utilised to acquire the opinion on knowledge sharing issues from airlines. Hereby, the quantitative data is arranged into three formats as alliance networks, job-task responsibilities, and office locations which are tested by non-parametric statistical tests. In the case of interviews with airline alliance executives in Thailand in Phase 3, discourse analysis is utilised in approaching qualitative data in order to gain the understanding on knowledge interactions in an airline alliance perspective.

The chapter concludes with the concerns and commitments to ensure the appropriate research conducts by discussing reliability, validity, and ethics in developing the outcomes of the study.

3.2 Research Paradigm

A research paradigm is a set of beliefs about the approaching phenomenon (social reality). Burrell and Morgan (2003), Crotty (1998), and Easterby-Smith, Thorpe, and Lowe (1991) arrange research philosophical terms into the selections of research paradigms. In philosophical perspective, these can be configured into the layers of the basic belief on the reality (*ontology*), the ways to be known based on the basic belief (*epistemology*), and the techniques to investigate the reality (*methodology*).

Practically, the correspondence between the utilised research method and the research paradigm is the important methodological concern (Saunders, Lewis, and Thornhill, 2003). Crotty (1998) holds similar views by pointing that "justification of our choice and particular use of methodology and methods is something that reaches into the assumptions about reality that we bring to our work". He further suggests the four major elements of research paradigm to be considered in developing a research project as epistemology, theoretical perspective, methodology, and methods. By adopting Crotty's (1998) research paradigm arrangement to this study, Table 3-1 illustrates research paradigm and methodological positions of this study.

From Table 3-1, the layers of the research paradigm (such as epistemology, theoretical perspective and methodology) divide the research philosophical concepts and terms (such as constructionism, interpretivism, and discourse analysis). To achieve the objective of this study in understanding the dynamics of AKM (in investigating what alliance partners can learn—how they learn-how the learning happens), the utilised research methods are interview and questionnaire (qualitative and quantitative methods). These are under the methodology

(techniques to investigate the reality) of discourse analysis and survey research by induction, based on theoretical perspective of interpretivism. The research fundamental issues (such as the basic belief, the ways to be known, and techniques of the investigation) are based on the concept of social constructionism (the making sense of reality is by socially constructing meaning). According to the illustration in Table 3-1, the rest of this section will focus on the issues of epistemology and theoretical perspective. The issues of research methods and techniques will be discussed in the next section.

Table 3-1: Research Paradigm and Methodological Positions of This Study

Epistemology	Theoretical Perspective	Methodology	Methods
-Objectivism	-Positivism (and	-Experimental Research	-Sampling
-Social	Post-Positivism)	-Survey Research	-Measurement
Constructionism	-Interpretivism	-Ethnography	and Scaling
-Subjectivism	-Critical Inquiry	-Phenomenological Research	-Questionnaire
	-Feminism	-Grounded Theory	-Observation
	-Postmodernism	-Heuristic Inquiry	-Interview
	-etc.	-Action Research	-Focus Group
		-Discourse Analysis	-Case Study
		-Feminist Standpoint Research	-Life History
		-etc.	-Narrative
			-etc.

Note: Research paradigm and methodological positions of this study are highlighted in blue.

Source: Adapted from Crotty (1998, p. 5)

Research perception in developing this study concerns both subjective and objective sides of the phenomena. Referred to Burr (1999 and 1997) and Crotty (1998), social constructivism is the perception of the way to consider the development of social phenomena which focuses on the relationship between individual and society in constructing the meaningful reality. Schwandt (2000) adds that social constructionism focuses on the collective generation of meaning as created and shaped by socialisation. Gergen (1985) suggests that the attention on the making sense of the meaning should be turned outward to the world of inter-subjectively shared social constructions of that meaning. In addition, meaning of the approach reality will depend on what concern on what attribute the approach is for (Becker, 1962). Therefore, the subjective and objective perceptions are the supplement and fulfillment of each other in the making sense of reality via socially constructing meaning (Crotty, 1998).

The intermediate standpoint between subjective and objective paradigm contains ranges of degrees in terms of proportion that each of the two paradigms engage. This fact also reflects characteristics of other philosophical strategies such as hermeneutics in which subjectivity leads objectivity (Burrell and Morgan, 2003), critical theory in which objectivity leads subjectivity (Steffy and Grimes, 1986) and post-critical doctrine, which deals with coherences between a priori and a posteriori knowledge (Polanyi, 1974). As for this project, although subjectivity and objectivity are equally concerned as dependent components, the nature of social constructionism highlights the dominant role of subjectivity.

In terms of the practices to identify the outcome of the study, inductive interpretation is utilised in making sense of the socially constructed meaning. Therefore, the reasoning method is from identifying the shared meaningful characteristics of the investigated cases in order to relate the incurred meanings in configuring the explanations (Hyde, 2000; Glaser and

Strauss, 1967). In this research project, both qualitative and quantitative methods are part of the data gathering and analysis processes. Hereby, the qualitative method involves quantitative aspects (for instance, typology in organising nodes of concepts via Nudist (the detail is practically presented in Chapter 4 and 6)). Nevertheless, the ideographic aim is reinforced by integrating qualitative aspects with the processes of interpretation in understanding qualitative and quantitative data.

From the discussions, the understanding in this section specifies the prime characteristics of research paradigm of this study as social constructionism approach with multi method research strategy. These natures are the fundamental principles for practices in the investigation including the ways to utilise the selected research methods. In the next section, the focus is on the ways to utilise research methods under multi method research strategy.

3.3 Research Methods

As alluded to the objective of this study (to examine dynamics of knowledge sharing in alliance context) and the core notion of the research questions under the objective, the study is developed to provide insight into knowledge sharing behaviours as well as forces and motives that affect choice of knowledge interactions between collaborative partners in order to further criticise theoretical frameworks. The scenario of sharing knowledge between organisations in the regard of methodology embraces factors and issues that center in investigating individual, intra, and inter-organisational knowledge sharing. In terms of a knowledge sharing system, the process of the interpretation is stipulated by knowledge's natures of existence. Polanyi (1966) classifies knowledge into two forms of existence as tacit

and explicit. Therefore, in accordance with Creswell (1994), Guba (1992), Easterby-Smith, *et al* (1991), McCracken (1988), Firestone (1987) on the concept of reality composition, this research is constructed based on the belief that the phenomena of knowledge sharing are subjective in terms of knowledge capturing, transfer, and creation and also objective in terms of arranging and acquiring transcribed knowledge.

By focusing on practical perspective of research methodology, this study employs multi method research strategy. To investigate dynamics of AKM in the airline industry, the participants are competitors in organisational and network scales. Employing qualitative and quantitative methods increases opportunity to reach the respondents as much as triangulates to enhance the validity of the acquired data from alliance partners and the networks (Denzin, 2001; Silverman, 2001b; Easterby-Smith, *et al*, 1991; Creswell, 1994; Greene, Caracelli, and Graham, 1989; Todd, 1979). On the one hand, the qualitative method assists the investigation in identifying specific characteristics of the cases and apprehending values that require sets of interpretative techniques (Silverman, 2000a; Crotty, 1998; Van-Maanen, 1983). On the other hand, the quantitative method assists the study via configuring the quantified variables for further understanding the meaning behind the presented figures (Harvy, 2000; Black, 1999; Punch, 1998).

Accordingly, the utilisation of multi-methods in the investigation embraces with the aspect of triangulation as mentioned in the previous paragraph. Denzin (1989) defines triangulation as the combination of methods in the study of a phenomenon. Based on this definition, Todd (1979) adds the crucial benefit of triangulation is increasing validity when the different methods provide consistent direction of the derived issues. In term of validation via triangulation, academic theorists classify triangulation based on the number of views. While

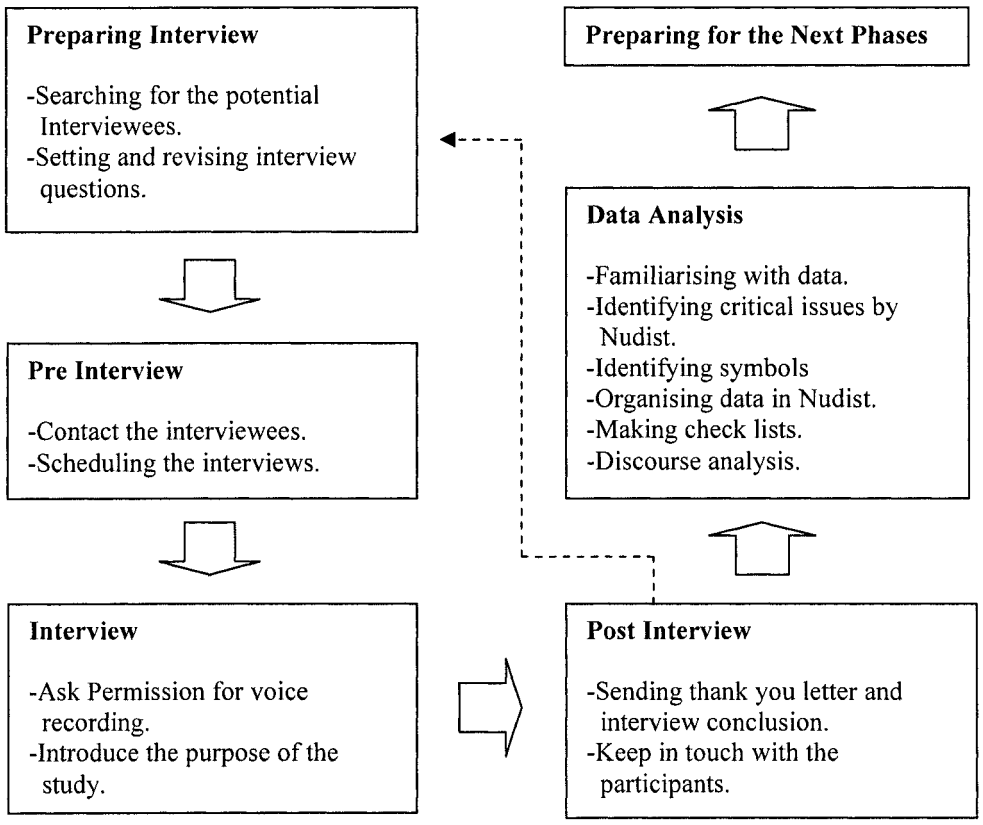
Moreover, from reviewing a number of research articles and Ph D. theses, the variety of adopting triangulation is in various sets of relation such as Lin, Yeh and Tseng (2005) and Costello (1996), who use quantitative techniques to support the qualitative method, Bhatt (1998) exerts quantitative method as a pioneer to develop further in-depth investigation by qualitative method, and Schacht (1999) employs qualitative and quantitative methods as continuous stages to support validity of the investigation on related issues. ***In contrast, it can be concluded that the multi-method research of this study exerts a quantitative technique to support qualitative approach and qualitative technique to support quantitative approach by focusing on the generation of meaning from both qualitative and quantitative data.***

In the next sub sections, the discussion is focused on the concepts of the employed methods and the utilised techniques in relating to the presented paradigms in the previous sections.

3.3.1 Qualitative Method

According to Punch (2005) and Bryman (2004), a qualitative method is a research strategy that usually emphasises words rather than quantification in collecting and analysing data. As for qualitative phases in this study, semi-structured interview is selected as the instrument for data gathering based on its main advantage to allow the researcher and the interviewees to interact with each other (Bryman and Bell, 2007; Saunders *et al*, 2003). In applying the steps of qualitative research by Bryman (2004)'s to research design of this study, there are six main processes in conducting qualitative research. These processes are presented in Figure 3-1.

Figure 3-1: The Processes of Qualitative Method



The interview preparation includes acquiring the potential interviewees' information (to know who, where, and what type of data can be gained) and setting the interview questions. After that, approaching and scheduling the interviews was arranged. During the interview, research ethics (such as asking for voice recording permission) and the suggested interview practices (such as avoiding leading questions, time control, etc.) were considered apart from the required data. After the interview, the conclusions from the interviews were sent to the

participants with a thank you letter. The raw data was processed and organised according to the stages of identifying, separating, and induction via qualitative techniques (discourse analysis) (will be detailed in the sub sections). Next, the analysed data was further utilised in preparing the next phases of the study.

In terms of the concept in qualitative data analysis, Silverman (2003a), Hyde (2000), Firestone (1987), and Van-Maanen (1983) indicate the nature of data analysis in the qualitative method is to identify specific characteristics of the population to establish conclusions which are shared by the particulars of every case under the investigation.

In the qualitative analysis process, traditionally, interpretation is the most common way to understand meanings of phenomena under participants' viewpoints (Titscher, Meyer, Wodak, and Vetter, 2002; Crotty, 1998). Interpretivism, as introduced in section 3.2.4, is a science of meaning acquisition (Silverman, 2003b; Layder, 1998; Glaser and Strauss, 1967). In the qualitative inquiry, interpretivism covers many techniques that contain the importance of the making of meaning (Goulding, 2005; Silverman, 2003b; Morgan and Smircich, 1980).

According to the social constructionism strategy in terms of epistemology (pragmatistic interpretivism), the critical principle to identify the research outcome is to interpret the meaning based on the speculations of reason and the experience of the senses within the context of the investigated phenomena (Burr, 1999; Tashakkori and Teddlie, 1998; Kenny, 1984). Although experience is the critical factor of the understanding process based on its role as an input of interpretation, it is selectively perceived and determined by human psychological makeup (Gubrium and Holstein, 2003; Hjorland, 2002). In spite of this fact,

human rationale and experience are under dependent relation rather than being choices of interpretative source.

Elements in the process of interpretation are vital for interaction towards the input stimuli (Saunders *et al*, 2003; Silverman, 2003b). In practice, the incurred expression is the outcome of the process of interpretation. The process itself involves the stages of recognising and perceiving, internal criticism, and individual perception.

In the case of analysing qualitative primary data, data and the investigated phenomena are input stimuli. Hence, the interpreted factors are in the form of perceived phenomena and transcribed texts. Although the transcribed texts are the main focus for the analysis process, the perceived phenomena provide additional ground knowledge which is also utilised in criticising the transcribed texts. Furthermore, practical principles in screening the perceived phenomena can reflect the engaged paradigmatic principle in the analysis as interpretation embraces the selected facets of the incurred phenomena.

3.3.1.1 Interpretation via Discourse Analysis

The transcribed texts from the interviews are the main qualitative data for the analysis in qualitative phases. The qualitative data organising software (Nudist) is utilised in facilitating data analysis. As for analysing data, disciplines of discourse analysis are the analysis technique to approach texts data.

Potter (2004) and Forhmann (1994) signify discourse as a linguistic object that can be counted and described. From this perspective, discourse analysis is the process of constructing, deconstructing, criticising, and interpretative reading towards forms of language (written discourse and signs in the case of this study). Basically, this analysis technique considers discourse itself and reality that the discourse refers to (Dunford and Jones, 2000; Parker, 1992; Gergen, 1991).

To analyse discourse, the making of meaning in social constructionism is embarked upon from capturing initial meaning from significant symbols (written discourse and signs). Therefore, discourse analysis practically contains the implication of the symbolic interactionism concept in the process of meaning construction. Blumer (1969) indicates the concept of symbolic interactionism as "meaning of such things is derived from and arises out of the social interaction that one has with one's fellows". Furthermore, human expression, communication, and interpersonal relations in particular associations are the sources of symbols that are shared in a socially constructed world (Rock, 1979; Ibid).

Silverman (2001b), Crotty (1998), and Charon (1992) add that because symbols of interaction are in streams of action, the selection of accounted symbols for interpretation is from evaluation of participants' interactions with self and others. In application to the concept of symbolic interaction in discourse analysis to the view of doing research, interpretation is centered on participants' expressed viewpoints and investigator's configurative systems which relate secondary data and other relevant knowledge (Denzin, 1978; Lauer and Handel, 1977; Blumer, 1969).

Practically, analysing discourse can engage with a number of approaches. These approaches are linguistics, sociology, psychology, literary theory, culture studies, etc. (Potter, 2004; Hammersley, 2003; Wood and Kroger, 2000; Schegloff, 1997; Gill, 1996; Sinclair and Coulthard, 1975). However, the selected approaches are dependent on the focus of analysis. In this project, the purposes of employing discourse analysis are:

- To understand how discourse ensures meanings from surface contexts regarding alliance cooperation and interaction from the interviews.
- To provide insight into what related socially constructed realities in the discourses participants refer to.
- To address factors and influencers that drive interactions within and between alliances.
- To identify discursive interaction of indicated collaborative interactions.
- To connect and arrange meanings.

From the purposes above, therefore, sociology and psychology are the critical issues in criticising discourses and related realities. Under organisational context, the constructed discourse based on a commitment to a valued position and the expression of experience is conglomerated from a concern with authenticity of social rather than individual experience (Grieves, 1996). Therefore, to focus on interactions in an alliance knowledge system, sociological approach of discourse analysis is the main analytical practice.

In this form of discourse analysis, analytical pattern is set to reasoning on a conglomeration of texts as well as a de-structuring of contexts in which constitute issues of interaction

(phenomena, setting, factors, and discursive evidences) in the considered discourse (Phillips and Hardy, 2002; Wetherell, Taylor, and Yates, 2001; Yates, Taylor, and Wetherell, 2001; Mayer, Wodak, and Jenner, 2000; Charon, 1992). Besides the argued sociological approach, psychological apprehension of discourse analysis also fortifies inspection and cohesion of the arisen meanings and referred issues from the contexts in discourse (Harre, 1995; Parker, 1992; Banton et al, 1985; Berger and Luckmann, 1971).

Regarding the deconstructive nature, discourse analysis is argued to relate with the discipline of postmodernism (Crotty, 1998; Dallmayr, 1997; Grieves, 1996; Dews, 1987; Derrida, 1983; Foucault, 1980). However, the utilisation of discourse analysis in this study is to identify the way a set of statements comes to constitute objectivities and subjectivities (Potter, 2004). Hence, deconstruction is just a portion of the discourse analysis process under symbolic interacted analytic proceeding.

3.3.1.2 The Sequences of Discourse Analysis

Practically, the importance of identifying symbols is to construct contexts from texts whereas the centre of discourse analysis is to deconstruct texts from contexts (Titscher *et al*, 2002; Schegloff, 1997; Charon, 1992; Blumer, 1969). Symbolic interaction is concerned in criticising evidence as well as a grounded principle. In addition, it reinforces discourse analysis techniques for relating evidences. In practice, the methods of symbolic interaction and discourse analysis are dependent parts of texts, contexts, and contents analytic cycle.

Therefore, from texts to analysis outcomes, the sequences of analysing discourse under symbolic interaction principle starts with:

1). Constructing contexts from texts to identify critical issues for further analysis.

2). The identified critical issues are directly and closely deconstructed to evaluate the arisen issues and discover discursive assumptions.

3). Texts, contexts, contends, and referred realities from the interview transcriptions are co-considered and related for extracting and connecting meanings.

Each stage of the process above creates collective interpretation. According to Bhatt (2001), the collective interpretation grounds on an interaction between background and foreground knowledge. In the process of analysing discourse, to comprehend discourse itself and related reality to the discourse, interpreting texts and contexts provides foreground knowledge of a criticised issue to be background knowledge of the further issues.

Hereby, secondary data and related knowledge to the focus subject are important for the way analytical processes progress as much as the screening system in which symbols are recognised. While the earlier interaction between background and foreground knowledge creates background knowledge for the next sequence, foreground knowledge from each critical issue frames the configuration of meanings. In addition, based on formative characteristics of interaction (behaviour expression and creator) (Lauer and Handel, 1977), the determinative interaction contains collective interpretation when individual issues are compoundly criticised.

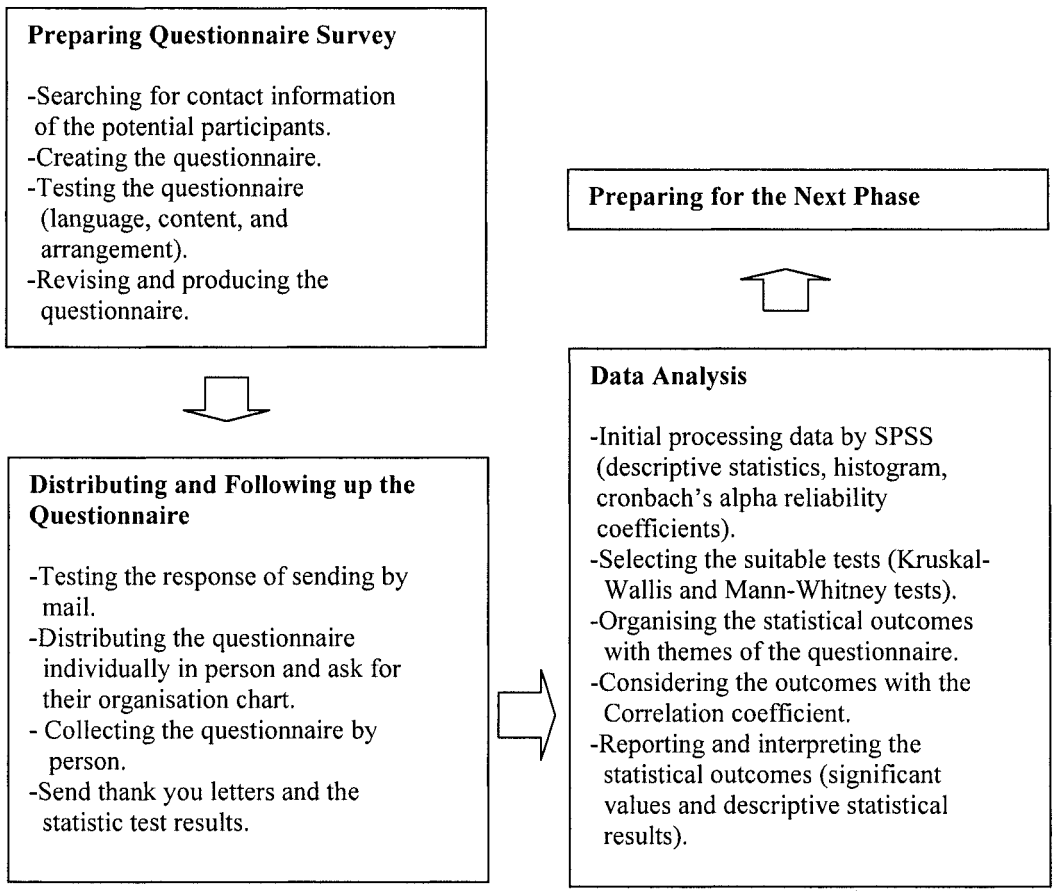
3.3.2 Quantitative Method

The quantitative approach is conceptualised by objective paradigm, deductive logic in practical view, statistical method of analysis, and confirmative investigation (Bazeley, 2004 and Saunders *et al*, 2003). This method normally deals with figures in identifying numerical logical reasonings based on relations between dependent and independent variables (Hair *et al*, 2003; Bryman, 1988). The questionnaire survey is an instrument of gathering data for quantitative enquiry (Saunders *et al*, 2003). Gable (1994) criticises the survey as the process of inference that the case of the sample presents the case of the whole population when proportion between them is in acceptable level under the standard intervals of statistical confidence.

As type of questionnaire can indicate type of data, which is another condition in selecting statistical tests (Oppenheim, 1999), therefore, to be more specific, the 5 point Likert Scale questionnaire is utilised as the main data gathering instrument of quantitative phase in this study. In this study, the process of quantitative research was organised into four main phases as preparing the questionnaire, distributing-following up, data analysis, and preparing for the next phase (See further detail in Figure 3-2).

Although the quantitative method is engaged in investigation, this project is not aimed at testing theory. As mentioned earlier, the focal point of the study is to construct theory, therefore, hypotheses in the quantitative phase are indicators towards direction of quantitative investigation rather than traditional quantitative hypothesis setting.

Figure 3-2: The Processes of Quantitative Method



As for quantitative data analysis under multi-paradigm perspectives, the analysis from initial analysis of quantifiable data via statistical tests requires further interpretation to criticise the indicated statistical figures. Hereby, qualitative discipline assists in approaching quantified data into social description. In this triangulated process, semiotics technique (quantitative interpretation) is utilised in criticising and explaining quantitative evidences.

3.3.2.1 Quantitative Analysis via SPSS

SPSS is a software package that was employed in the part of quantitative analysis of this research project. The software is the facilitator in calculating statistical formulas (Cramer, 1998). However, the utilisation of the tests, directions, and territory of the outcomes is subjected to application of the tests according to objective of the investigation (Morgan, 2001; Foster, 1998). Analysing quantitative data by statistical tests is the primary step of processing data.

In this project, there are two stages of initial quantitative data analysis. In the first stage, the histogram graph, central tendency from descriptive statistics, and reliability value based on Cronbach's Alpha from Kolmogorov-Smirnov tests are processed in order to consider which statistical tests are to be embraced in quantitative analysis.

The second stage is the arrangement of statistical tests according to the three set formats of independent variables. Firstly, format one is the analysis on three alliance networks (Star-OneWorld-Sky Team). Secondly, format two contains two groups of respondents according to their positions (management-operation). Thirdly, in format three, there are two groups of respondents regarding on their office locations (town office and airport). Within the second stage, the involved statistical tests are Kruskal-Wallis test, Mann-Whitney test, and Spearman's Rho Correlation.

As descriptive statistics can benefit the understanding in conjunction with other statistical tests, it is also embraced in the analysis in terms of the central tendency of all data arrangements (8 groups of descriptive data in which are presented in terms of over all data,

Star Alliance, Sky Team, Oneworld, management level, operative level, town office, and airport station).

3.3.2.2 Principles in Choosing Statistical Tests

There are a number of principles to select statistical tests based on characteristics of data. That is the consideration in terms of number of population and types (categorical and quantifiable vs. ordinal and nominal) and also in terms of number of variables involved and characteristics of data after processing the initial statistical tests (Black, 1999; Bryman and Cramer, 1997; Hair *et al*, 2003; Sekaran, 2000; Zikmund, 2000).

The selected statistical tests could be a dilemma if the natures of the data share multi characteristics which do not share the same category of the suitable statistical tests. Hence, this challenge should be considered by focusing on the ordinary principles as well as on the required outcomes from analysing data that the tests provide.

Accordingly, the selection of statistical tests are utilised according to the natures of data (measurements on ordinal data, skewedness of distribution, and number of population related to frequency of ranking) and methods of data arrangement (two and three comparison formats and value of group reliability).

3.3.2.3 The Process of Statistical Measurements

Table 3-2 indicates concepts of the utilised statistical tests, their application, and their specification in this study. In conclusion, by analysing quantitative data by SPSS, the insight from considering Histogram graphs and significant values from one sample Kolmogorov-Smirnov tests are involved in the decision for utilising Nonparametric tests. Kruskal-Wallis and Mann-Whitney tests as Nonparametric analyses are for measuring variables according to data arranging formats. The variables with significant values are analised individually and also co-considered with other related variables in which indicated by the results of Spearman's Rho Correlation Coefficient test.

To consider variables individually, mode and mean are involved in terms of dispersion of data around central tendency. The statistical tests also support organising variables. Cronbach's alpha reliability coefficient was employed in organising variables that are related into the same group for further analysis and interpretation.

Table 3-2: The Utilised Statistical Tests, Their Application, and Their Specification in This Study

Statistical Tests and Indicators	Functions for This Project	Stages of Quantitative Utilisation[1]	Specification for the utilisation of the tests in this study
1). Histogram Graphs	To consider choices of statistical tests and probability.	1	N/A
2). One Sample Kolmogorov-Smirnov Test	To compare the observed frequencies of the agreement degrees of each ordinal variables.	1	two-tailed probability value at 5% of confidence.
3). Mode and Mean	To indicate the most frequency of the agreement degrees and co-consider in data interpretation.	1	N/A
4). Kruskal Wallis	To identify significantly different samples between three groups.	2	To test format one of data arrangement [2].
5). Mann-Whitney Test	To identify significantly different samples between two groups.	2	To test format two and three of data arrangement [3].
6). Spearman's Rho Correlation Coefficient	To assess the strength of relationship between two variables	2	N/A
7). Cronbach's Alpha	To measure internal consistency.	2	<.6 is poor, .7 is acceptable, >8 is good.

Notes: 1.Stage 1 is for consideration in terms of utilising statistical tests. Stage 2 is for acquiring the statistical results for further analysis.

2. Data arrangement format one is the way to approach data in terms of alliance networks. Therefore, there are three groups of data as Star Alliance, Sky Team, and Oneworld.

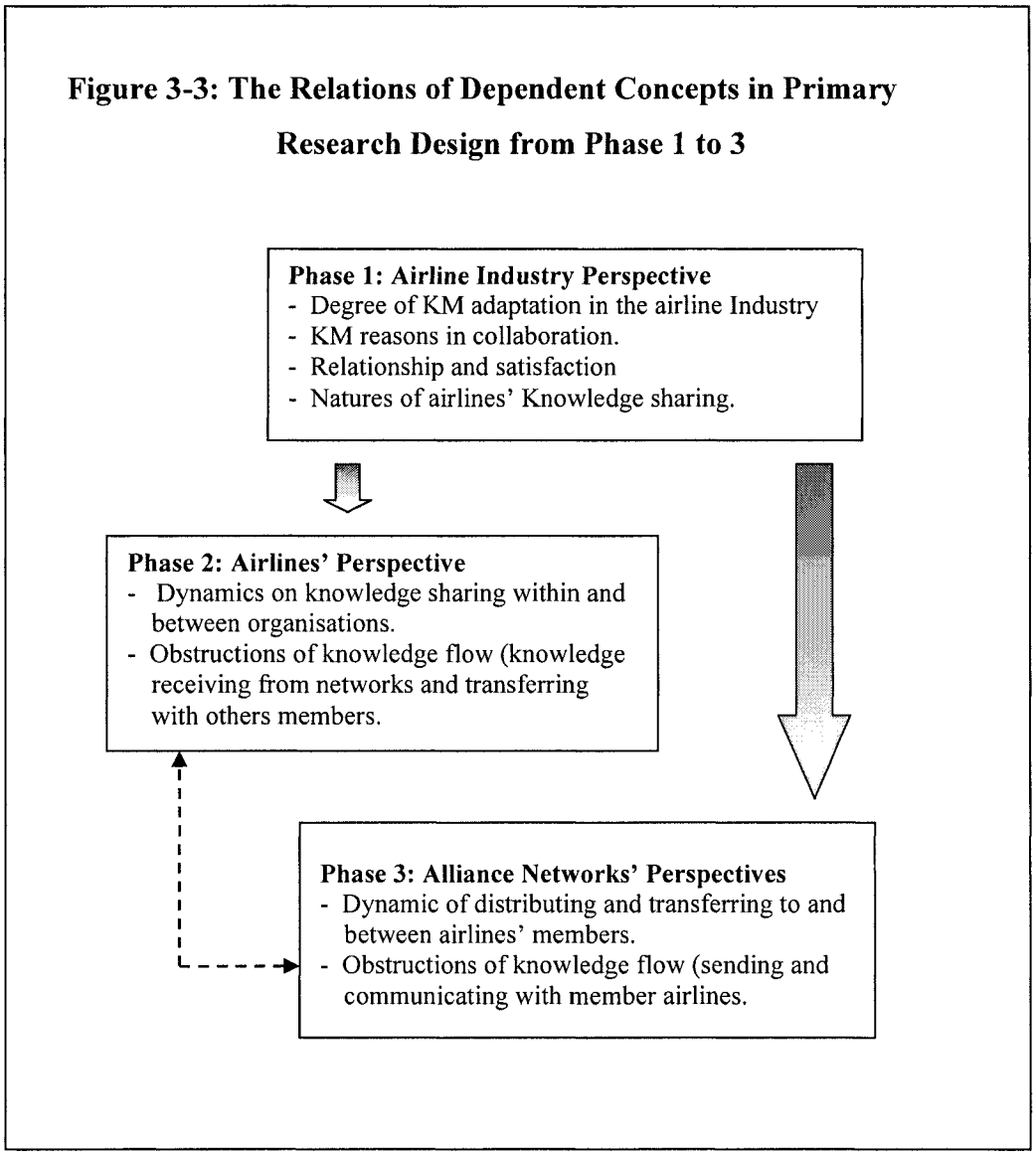
3. Data arrangement format two is the way to approach data in terms of job-task responsibilities which compose of two groups of data, as management and operative levels. As for data arrangement format three, it is the way to consider data in terms of office locations which compose of two groups of data as town office and airport station.

3.4 Primary Research Arrangement

The discussion on primary research in this chapter mainly presents issues of practical research methodology based on the concepts of theoretical research methodology in the former section. In accordance with the objectives of this research related to research philosophy, data gathering processes are designed into three phases. They are interview 1, questionnaires, and interview 2.

Figure 3-3 illustrates the relation of dependent concepts in primary research design from Phase 1 to 3. Although, in a sense, Phases 2 and 3 can be perceived as comparative based on fundamental viewpoints towards knowledge sharing derived from Phase 1, in fact, concepts behind dynamics of knowledge sharing in airlines' perspectives and alliance networks are focusing on different supplement issues. It is because, in knowledge sharing activities, airline members perform roles of cooperators while alliance networks contain roles of leaders. Hereby, the derived issues in Phases 2 and 3 are in different role perspectives and focus on different angles but supplement as elements of flow in a knowledge sharing system.

Figure 3-3: The Relations of Dependent Concepts in Primary Research Design from Phase 1 to 3



Time scale for gathering data of the three phases is presented in Table 3-3. From the introduced related concepts between phases and the presented time scale, the further discussion will be essentially focused on data gathering concepts, instruments, and targeted respondents.

Table 3-3: Time Scale of Data Gathering

Primary Research Arrangements	Years of Gathering Data	Periods of Gathering Data
1). Phase 1	2003	July-October
2). Phase 2 :Testing the questionnaire :The Main Survey	 2004 2004-2005	 June-August November-February
3). Phase 3	2005	September-October

3.4.1 Phase 1: Interview 1 (with Airlines, Airline Alliance Networks, and Government Organisations)

According to the overall objective of this research project in which is to examine the dynamics of AKM, although the main focus is on inter-organisation, the related critical issues also include knowledge sharing activities in individual and intra-organisations. As for the objective of the investigation in Phase 1, the outcomes are expected to answer "what can members of an alliance learn?

The initial data gathering was designed to study structure of airlines' alliances and knowledge management implications, particularly in the perspective of international airlines' collaboration in Thailand. To gain basic understanding on alliance knowledge management in the airline industry, which KM is not formally combined to airlines' strategic management before and at the period of conducting the study (based on secondary data investigation),

Phase 1 was designed to study collaborative issues (natures of airline alliances and airline business environments) related to the foundation of inter-organisation knowledge sharing systems. More details of the investigation in this phase are discussed in the sub-sections.

3.4.1.1 Data Gathering Instruments

Semi-structured interview is the instrument of data gathering in Phase 1. It was prepared by aiming to approach potential participants in order to acquire ground data of alliance dimension between airlines (in Thailand in particular), and knowledge management understanding and implication in their strategic alliance managements.

Questions were designed under a purpose to seek data on reasons of alliance, existing reciprocal benefits, direction of cooperation, knowledge management understanding and adoption, and knowledge sharing between collaborative partners. Most questions are open ended. There are 10 main questions plus subsequent questions depended on answers of each interviewee. See Appendix A-1. The interviews were in Thai and English according to the preferred language by the respondents. All interviews were transcribed from the voice recorder into English texts.

3.4.1.2 Respondents

The eight interviews were set with six international airlines in Thailand, which cover 3 major networks; one airline is the alliance network's main representative in Thailand, one interview was done directly with an alliance network, and another was done with a government officer in the Aviation Department. However, one of the respondents is the top level officer of the Transportation Ministry. Hence, the interviews can be separated into three groups; airlines, alliance networks, and government agency (Aviation Department of Thailand).

The three groups of the respondents are relevant to each other as they are parts of the incurred dynamics of AKM within the industry. The interview instrument for all respondents is the semi-structure interview. However, different kinds of organisation have different familiarity and expertise in different aspects, so some specific questions were added in order to get as much data from each party. As for the length of the interviews, it is varies from 29 minutes to 1 hour 58 minutes (See Appendix A-3).

3.4.2 Phase 2: Questionnaire for Airlines

In Phase 2, the questionnaire survey is utilised by targeting to acquire data on dynamics of knowledge sharing within and between organisations according to the identified alliance activities that embrace knowledge transfer from Phase 1. The derived outcomes in Phase 2 are expected to answer the research questions in terms of "how do airlines learn?" and "how does the learning happen?".

By approaching airlines as the survey participants, the critical themes in this phase are derived from collaborative partners' perspective. So, airlines in three major alliance networks (Star Alliance, Oneworld, and Sky Team) that operate in Thailand are the respondents.

3.4.2.1 Data Gathering Instruments

The questionnaire is divided into two parts. A five-point Likert Scale is located in Part 1 to measure respondents' expression on 48 statements. They are classified into six sections from A-F; learning culture and management system, ICTs within organisation, knowledge sharing within organisation, learning culture between organisations and management system of alliance network, jointly developed ICTs, and knowledge sharing between organisations. In Part 2, they are open-ended questions involving respondents' demographic data (this data is used in arranging and organising the questionnaire's outcomes) and additional comment on knowledge sharing difficulty in alliance network. The questionnaire is presented in Appendix B.

The understanding as well as arisen questions from interview 1 has outcomes in terms of characteristics of airline business, knowledge management environments, knowledge sharing tools, and knowledge technology integration. These are jointly determined in designing the 48 statements.

A pilot test was conducted to ensure statements' organisation, language level, statement clarity, and avoidance of unnecessary technical terms. In this process, the pilot questionnaire

were sent to twenty-five people in various positions from exclusive to operative levels in order to gain a wider span of language test. From the comments and feedback, the level of their positions and education (respondents' highest education range from college, Bachelor's degree, Master's degree, to Doctoral degree) was the main factor in terms of their ability to comprehend and interpret the questionnaire. The suggestions from the pilot test were considered in adjusting the questionnaire.

Each set of the questionnaire composes of an introduction letter, the questionnaire, and the conclusion from interview 1 for the respondents who participated in gathering data in Phase 1. After testing the questionnaire distribution by the mailing method with five airlines, the feedback produced a better return opportunity of the answered questionnaire by personal contact.

The complex field tasks of personal contact were expected when each airline was planned to be approached in two office locations (town office and airport station). Nevertheless, tremendous contacts and visits (a hundred and one calls and a hundred and sixty-one visits) were derived from conducting surveys with airline employees, which finally resulted in forty-three questionnaires returned from seventy questionnaires sent. From this amount, twenty from the twenty-four airlines participated in the survey. Furthermore, some airlines provided their organisation charts which were utilised in analysing interactions between employees and co-supported in configuring alliance knowledge sharing structures.

3.4.2.2 Respondents

As for the main survey, the questionnaires were sent to all possible international airlines which are in the three major airline alliance networks and also operate in Thailand (24 airlines).

Each of airlines was sent three sets of questionnaire to top executives, human resource or IT managers, and station managers (two sets were sent to respondents in town offices and another set was sent to offices at the airport). However, a number of staff at the town offices of airlines refused to participate in this research when approaching the potential respondents. Thus, the questionnaires were sent to 70 potential respondents. There were 43 returned questionnaires which resulted as 61.43% of the response rate.

According to ethical issues in doing a research, respondents' personal data such as their job titles may need to be utilised in organising data and is presented in documents in categorical terms rather than specific name of their positions.

3.4.3 Phase 3: The Interviews with Airline Alliance Networks

The context of social interaction according to dynamics of knowledge sharing in Phase 3 is focused on alliance network perspectives. From Phase 1, knowledge has been gained in the scenarios of fundamental nature of collaboration between airlines, cooperative activities as bases of alliance knowledge flow circulation, and potential factors affecting knowledge sharing in alliance network.

In Phase 2, the investigation was continued by focusing on dynamics of sharing knowledge within organisation of collaborative partners and between them. The results were approached on the perspective of airlines towards knowledge flows under the continuum of competitive synergy.

In order to understand the two sides of influences on the AKM, in Phase 3, the derived outcomes in Phase 3 are expected to answer the research questions in terms of "how do airline alliance learn?" and "how does the learning happen?". In this study, dynamics of knowledge sharing in the perspective of alliance networks are focusing on the issue of values in alliance knowledge sharing, leadership, alliance knowledge flow structure.

3.4.3.1 Data Gathering Instruments

In Phase 3, semi-structured interview is also the data gathering instrument as in Phase 1. However, in this phase, the focus is for approaching perspectives of alliance networks.

According to roles of the group leader and coordinator of alliance networks of the respondents in this phase, interview questions are aimed to scrutinise the issues of alliance culture, leadership styles, alliance structures, circulation of alliance knowledge flows, and attitude towards collaboration of members in the group.

The interview in this phase contains 14 questions (See Appendix A-2). All are open ended semi-structure questions. They are divided into three main sections; "culture and leadership style of alliance network", "information and communication flows in network", and "alliance

networks' knowledge flow and perceptions from cooperation with airlines members". Moreover, the interviews were in Thai and English according to the preferred language by the respondents. However, all interviews were transcribed into English texts

3.4.3.2 Respondents

By focusing on perspectives of alliance networks, the respondents were assigned to be executives of the three airline alliance networks (Star, Sky Team, and Oneworld alliances) in Thailand. In fact, regarding the initial approach to those airline alliances, only one network actually has separated alliance organisation to cooperate with airlines members in Thailand. Another two are airlines in the groups that have a strong market position in Thailand. As for the length of the interviews, it is varies from 32 minutes to 1 hour 9 minutes (See Appendix A-3).

3.5 Reliability and Validity (R&V)

To focus on reliability and validity in measurement, reliability is referred to as the stability of measuring a concept (Punch, 2005; Easterby-Smith *et al*, 1991) whereas validity is a concern with the integrity of the conclusions that are generated from a piece of research (Bryman, 2004). Because a reliable project must contain valid practices within the investigation process, the compatibility between reliability and validity offers the reaffirmation on the credibility of the study. Hereby, R&V and the influences between them are under consideration in developing the project.

The explanations by Van Maanen (1988) on the shortcomings of qualitative and quantitative methods are relevant to reliability and validity regarding the natures of the methods. When subjectivity contains some degree of doubt on validity and the issue of certainty in social circumstance, one could question reliability in the qualitative method. The limitation of detail in measuring could arise queries on the content validity (relevant to measurement validity) in the quantitative method.

In this project, by embracing analysis triangulation (employing counting as well as interaction between background-foreground knowledge with qualitative data and mathematic semiotic with quantitative data) and method of triangulation (to use qualitative and quantitative methods to triangulate the outcome) can deliver R&V on the main issues where the related contents provide the similarity, consequence, or compatibility of the outcomes from the different phases as much as rechecking the understanding during gathering data and between phases (Denzin, 1989).

3.5.1 R&V in Qualitative Phases

Regarding the application from the meaning under the presented definitions, when reliability is about the constancy of the derived essence in different times under the same research factors (participants, research instrument, contents in questions, etc.) and validity is about the assurance that the measured outputs are from the employed measurements, the sequences and tactics to gain understanding are the central issues in R&V in qualitative conducts of this study (Kirk and Miller, 1986).

Regarding "***qualitative reliability***", the role of measuring reliability is to minimise errors and bias in a study (Yin, 1994). To design the study into phases, it gives opportunity to minimise error and bias in qualitative conducts by reassuring the understanding from practices such as embracing empirical conclusions of the other studies in setting the interview questions, checking the understanding with the participants during the interviews, sending the interview conclusions to the participant and provide them the opportunity for feedback. Moreover, the similarity, consequences, and magnified details between the outcomes of qualitative phases (1 and 3) are the indications that the project contains internal measurement reliability.

In relation to the concept of social constructionism, the presented outcomes are based on the understanding of the researcher on the derived meaning of the interpretation of the interviews. The "***qualitative validity***" is reassured by the utilised techniques. In qualitative phases, quantitative techniques as such counting and grouping the interview contents are utilised in organising data via Nudist. Furthermore, the understandings of the meaning of the interpretation of the interview data integrate with symbolic interactionism in the way of engagement with discourse analysis under the principle of social constructionism. These techniques escalate validity by making the subjective side of the qualitative data more detectable, to further understand the collective meanings and be supported by other discourses in a group of the contents. Moreover, the opportunities to revisit some interviewees and sending the interview conclusions to the participants help to validate the acquired data as well as to reaffirm the understanding.

3.5.2 R&V in Quantitative Phase

As mentioned earlier, the main sources of R&V in quantitative conducts include the issue of the description on data gathering's objectives for the participants and the way to understand quantitative data to ensure R&V and the issue of the conditions and rules of statistical tests as well as the amendment on data gathering instrument after the pilot test (Hair *et al*, 2003; Saunders *et al*, 2003).

To focus on "***quantitative reliability***", apart from embracing method triangulation as the alternative of test-retest reliability (Hair *et al*, 2003), Cronbach coefficient alpha is utilised to acquire reliability from the statistical calculation towards variables by assessing the internal consistency and the compatibility of the results from the same and relevant sections. Under these assessments, all the outcomes give acceptable and high reliabilities when <0.6 is poor, 0.7 is acceptable, and >0.8 is good (Sekaran, 2000). In addition, in applying the statistical results in analytical parts, the consideration on the values of the Cronbach coefficient alpha and Spearman's Rho Correlation (two- tailed) support the process of mathematic interpretation in understanding the measurement scales with the other statistical conditions.

As for the "***validity in quantitative phase***", this study contains validity in terms of concurrent and face validity (Punch, 2005; Bryman, 2004; Easterby-Smith *et al*, 1991; Sarat, 1990). To set the questions in the questionnaire, the questionnaires from the other studies in KM (such as the study by KPMG on KM in Europe and the US, the study by Costello (1996) on the role of IT in AKM, etc.) were considered as guidelines. By approaching the data gathering instruments and the outcomes among this study and the others, the incurred benefits support

analysis process on ***concurrent validity*** when the cases are known to differ and that is relevant to the concepts in the questions (Bryman, 2004).

Furthermore, in ensuring that the findings from quantitative measurements are really about what they appear to be about (***face validity***), the questions were amended after the pilot test (Ibid) and complied with the statistical conditions in utilising tests from the data attributes (such as the selection for non parametric tests) (Hair *et al*, 2003; Sekaran, 2000).

3.6 Ethics in the Research

Ethics in conducting research relate to the appropriateness of the researcher's behaviour towards the rights of participants in the study and entities who are affected by it (Saunders *et al*, 2003). As the primary data is gathered from people on the ways in which they perform knowledge interactions within alliance learning system, this study typically required social science ethical concerns from prior to collecting data to the utilisation of the results. Hereby, the fundamental concerns are effects on participants.

In addition to social science ethical concerns, specifically, this research is designed and strictly proceeds under the university's ethical policy. At Northumbria University, the ethical guidelines in association with social science research advocate good practices in term of "Beneficences (doing good)" and "Nonmaleficence (not doing harm)" (Gardiner and Chandler, 2006). Based on the nature of the research in the alliance context, the ethical concerns are not accounted only on effect to individual participants but also to their

relationship with other alliance members in networks that the organisations of the participants belong.

Then, to comply with the two fundamental guidelines and the effect on relationship within alliance networks, the ethical concerns are in terms of approaching the participants (informed consent, voluntary, and the right to withdraw (Miles and Huberman, 1994)), the right to privacy (confidentiality and anonymity (O'Leary, 2004)), and maintaining objectivity in data utilisation (Saunders *et al*, 2003).

3.6.1 Approaching the Participants

Ethics in approaching the participants in this study is achieved via providing the description of the research both in document and verbal form, grounding on voluntary participation, contacting in office hours, the participants' preferred contact channels, and offering them the right to withdraw as well as asking for their permission on voice recording before the gathering data session starts (see the introduction letter in Appendix A and B). From the three phases of the research setting, these ethical practices lead to the different numbers between positive replies and the number of actual participations due to some of the prospective participants withdrawal according to lack of time. In addition, when participants asked for the voice recording to be switched off in some moments during the interview, the researcher complied and asked for the permission to employ the understanding from the content out of the record.

3.6.2 The Right to Privacy

Confidentiality and anonymity are the closely related issues regarding the right to privacy of the participants (O'Leary, 2004; Williams, 2003). To deal with the key informants who have managing authority on the specific business operation as such airline collaboration in the case of this research, the balance between ethics and presenting critical data that includes names of participants is under consideration.

As informing the participants that the provided data would be occupied strictly for the academic purpose only and anonymity was guaranteed, participants' pseudonyms are employed in various data presentation. According to these practices, participants' rights to privacy have been protected on every explicit referred data in the report. Nevertheless, transparency in conducting the research is maintained by preparing the set of pseudonyms index for academic auditors (supervisors and examiners).

By using multi method research strategy, statistical data from the survey is naturally anonymised while the interview data requires the researcher to conceal the participants' identities to ensure the anonymity. Therefore, the fictitious names are utilised instead of the name of the participants in order to protect them from potential harm and deception in accordance with their participations in this study (See the fictitious names in Appendix A-3).

In addition, in terms of overall protection on the right to privacy of the participants, their data has been kept securely in a password required environment.

3.6.3 Maintaining Objectivity

Although it is impossible to eliminate the perspective of the researcher from the researched phenomena (Easterby-Smith *et al*, 2002), the practices (such as typology and check lists) to retain and assure objectivity in understanding and utilising the data promote the appropriate of research ethical conducts (Saunders *et al*, 2003; Bryman, 2001; Creswell, 1994). Based on the characteristics of the inductive interpretation which challenge the way to minimise the bias of the researcher in maintaining objectivity, the focuses in understanding and utilising data are on the data itself rather than the researcher (Lincoln and Guba, 1985).

Hence, objectivity in this study is perceivable from the ways to report the results (explicit indication of data) which are primarily objectively constructed based on the importance from confirmability, reliability, and validity. Comfirmability of this study is reassured from providing opportunity for the participants to feedback on the conclusion of the collected data in each phase as well as from the reassurance on data authenticity with the examinable data for a group of academic auditors. As for reliability and validity of the measurements which were described in the previous section, both of them escalate objectivity and reliability in utilising data.

The reported results of qualitative phases analysis are presented in analysis Chapters 4 and 6 while Appendix A indicate details of the interview setting. The results of quantitative phase analysis are presented in Chapter 5 while Appendix B includes detail of collecting data and the quantitative data conclusions.

3.7 Summary

To achieve the research objective in understanding the dynamics of AKM by investigating on what alliance partners can learn- how they learn- and how the learning happens, this research project employed a multi method strategy (qualitative and quantitative methods) under the concept of social constructionism. Comprehension of practices regarding social constructionism is related to other research philosophical sequences.

That is, to construct the critical contents from the shown evidences as well as the way to set the project, these processes embrace the characteristics of, firstly, the view in the dependence of objectivity and subjectivity in approaching and understanding the investigated phenomena. Secondly, it is about the characteristics of the practices to focus the cases and factors of AKM on their functions and utilities in the way to understand them as much the way to configure the connection between them. Thirdly, it is the characteristics of the reasoning principle exploring characteristics of knowledge sharing in individual organisations and in strategic alliances to identify the shared and related characteristics from the arisen evidences in identifying the issues of dynamics of AKM.

As the discussion in this chapter is highlighted on methodological principles in conducting this research project (including research philosophical paradigm-theoretical perspective-methodology-methods and the issues of ensuring the reliability and validity under an ethical frame), the next chapters focus on the utilisation of the argued principles with the research evidence in data analysis sections.

Summary of the Section I

Section I introduces the research statements, the relevant literature to this study, and the research methodology. These are the critical research issues that provide direction for the investigation. In terms of research setting, Chapter 1 set the research aim to explore dynamics in AKM and research questions to trace on "what can alliance member learn?", "how do they learn", and "how does the learning happen?". In Chapter 2, the review of the literature indicates knowledge gaps in terms of factors in AKM, their roles, and their relationships in which correspond with the research aim and can be identified by the investigations according to the research questions. In Chapter 3, research practices and notion are explained by the focused research paradigm while the utilised methodology specifies the integrated research methods and design. The represented key issues in Section I are the base of the research investigation processes in the next sections.

Section II: The Analysis

From the discussions on the fundamental issues for the research investigation in Section I, the focus of the presentation in Section II is on the primary research. Section II has three Chapters; Chapter 4: the analysis Phase 1 (the interviews with organisations in the airline industry), Chapter 5: the analysis Phase 2 (the questionnaire survey with airlines), and Chapter 6: the analysis Phase 3 (the interviews with airline alliance executives in Thailand).

According to the research design, the investigation in Phase 1 is expected to answer the first research question which is "what can alliance members learn?". Phase 2 is designed to answer the second and the third research questions under the perspective of airlines, which are "how do airlines learn" and "how does the learning happen?". As for Phase 3, its' aim is to answer the second and the third research questions under the perspective of airline alliance networks, which are "how do alliance networks learn" and "how does the learning in alliance networks happen?".

Chapter 4

Data Analysis Phase 1: The Interviews with Organisations in the Airline Industry

> *"The use of co-operative agreements as a means for learning implies that learning processes are developed within the framework of an agreement, which has it own identity and whose development and results (the agreement performance) play a very important role in the generation and transfer of knowledge among the partners."*
>
> *Escriba-Esteve and Urra-Urbieta (2002, p. 334)*

4.1 Introduction

The objectives of primary research phase 1 are to identify issues in airline alliance knowledge management, in terms of "what alliance members can learn". The investigation process on semi-structured interviews is initially presented in the *analysis introduction section.* It discusses the issues of data and analysis arrangements.

In the later section regarding the *data analysis*, the data is analysed and discussed based on the arisen issues in the acquired data and the objective of Phase 1. The analysis topics are determined under the issues of knowledge management application in the airline industry, learning related alliance reasons, satisfaction on knowledge based reciprocal benefits, and knowledge sharing channels.

After that, the conclusions of the Phase 1 outcomes are forwarded to the other phases by evaluating the indicated critical findings with the aims of the Phase I investigation, the objectives of the study, and the response to research questions.

4.2 Analysis Introduction

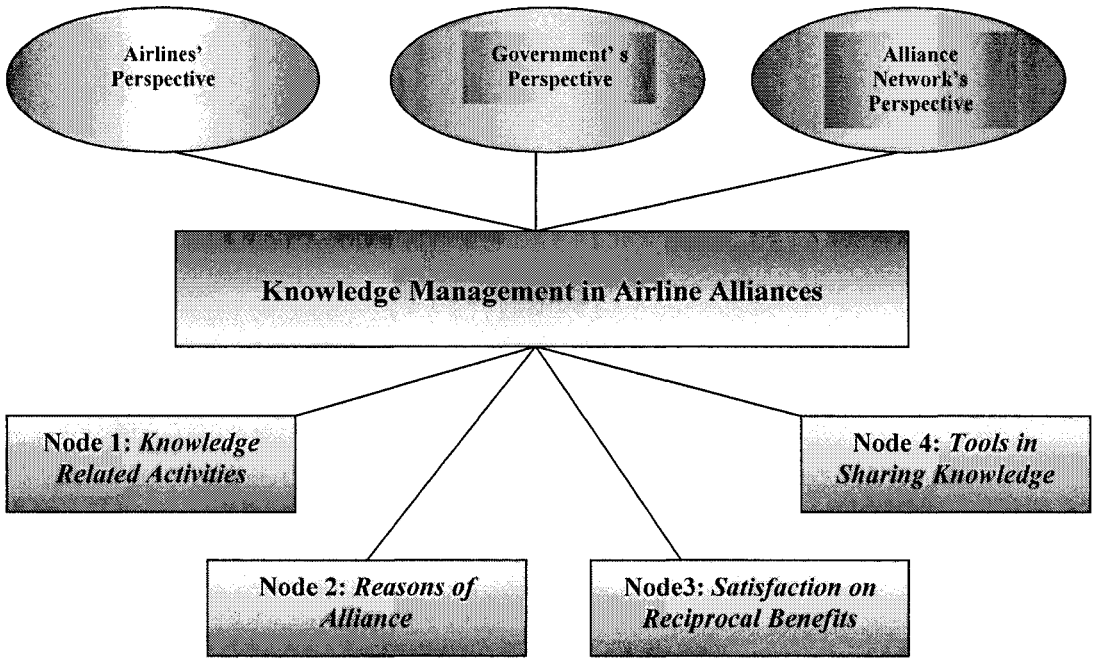
In accordance with the research objectives, review of the literature, and the utilised methodology, the objective of analysing data in Phase 1 is to investigate fundamental issues of AKM in terms of knowledge application levels, alliance knowledge activities (motive and satisfaction), and channels of alliance knowledge sharing. The derived outcomes are expected to explain the issues of what alliance members can learn in alliance networks, which are the fundamental issues of dynamics of alliance knowledge sharing.

In Phase I, the qualitative method is dominated by the practices in data gathering and analysis. From the interviews with organisations in the airline industry (airlines, alliance networks, and government agencies related to aviation in Thailand), the raw data was transcribed from a voice recorder. One interview is in English and others are in Thai according to native language of the interviewees. The transcribed scripts in Thai were translated to English.

Before organising the data by Nudist, the translated data was familiarised and configured, the relevance based on content from the acquired data. From the organised issues in designing interview questions, the derived issues from the

interview were configured by Nudist as the issues of the knowledge related activities, reasons of alliance, satisfaction on reciprocal benefits, and tools in sharing knowledge. Figure 4-1 annotates a map of the four nodes of concepts.

Figure 4-1: Four Nodes for Organising Text Data via Nudist in Phase 1



Chapter 3 describes the issues of qualitative analysis techniques, and discusses the notion that social constructionism is engaged in recognising the critical meaning from phenomena according to the participants' elaborations, which relating them into

themes in Nudist. In terms of approaching contents and contexts in the interviews, discourse analysis together with symbolic interactionism are the techniques to construct and interpret the primary data.

Regarding the arranged raw data by Nudist, texts from the interviews were organised into four main nodes as mentioned in the previous paragraph. Table 4-1 concludes the content of the interviews in accordance with the configured nodes (focusing on airlines respondents). Each main node was further categorised into sub nodes based on the evidence in the content.

The first node contains the relevant contents on the application of knowledge management in the airline industry. The understanding and daily operative practices are the main factors in investigating this theme. As for ***the second node***, reasons that airlines form up or affiliate to alliance networks are separated into four sub nodes to reduce risk, to gain economies (of density, scope, and scale), to develop technology, and to block competition. ***The third node*** focuses on satisfaction towards knowledge based reciprocal benefits, the indications on movements in affiliation between networks, current status, and perceived benefits reflect the satisfaction levels towards outputs from collaborative learning (operative and learning benefits). ***The fourth node*** contains the data regarding knowledge sharing activities which pursue the issue of knowledge sharing channels in particular. It was further arranged into the contents regarding intra and inter-organisational knowledge sharing perspectives to consider compatibility and efficiency.

Table 4-1: The Conclusion of the Interviews

	Themes of the Interviews			
Airline Participants	**Understanding and Application on KM System[1]**	**Reasons of Alliance**	**Satisfaction on Reciprocal Benefits[2]**	**Knowledge Sharing Channels**
1. Sara	K. choatic type (knowledge recognition but lack of linkage between capturing and effective knowledge transfer)	Not ally with any networks but cooperate with some airlines to expand network and reduce cost.	3 main issues	Ineffectiveness of using automation in knowledge Sharing.
2. Max	K. enable type (Emphasizing KM on IT side and centerising service production flow on learning)	Network expansion, cost saving, and revenue enhancement.	3 main issues	Focusing on internal and external training.
3. Alis	K. enable type (Focus learning on limited approach)	Network and customer Based expansions.	2 main issues	Support knowledge sharing activities.
4. Peter	K. awareness type (Realising on knowledge potential but no serious knowledge management implementation)	Cost sharing in marketing.	1 main issue	Knowledge is shared in restrict areas.
5. Andrian	K. enable type (Realising on standard function of knowledge utilisation)	Network expansion and cost reduction.	4 main issues	Critical to intra and inter-organisational learning, specially, in Thai market.
6. Luna	K. awareness type (Realising on critical of knowledge but in limited approach)	Cost reduction and network expansion.	2 main issues	Share knowledge in extensive activities.

Note: 1. Based on knowledge management application levels by Parlby (2000) (see the further illustration in section 4.3.1)

2. Based on the airlines' history in affiliations, the number of perceived benefits, situation to depend on network, and status in the network (see the configuration in Table 4-4)

4.3 Data Analysis

The purposes of identifying the fundamental issues in AKM, are to help to understand the general apprehension on alliance learning system in the airline industry and to answer the first research question (what can alliance members learn?). The issues which identified from the primary data are in the scenarios of the application to knowledge management system, airlines alliances' knowledge sharing reasons, satisfaction on knowledge based reciprocal benefits, and knowledge sharing channels between partners.

4.3.1 Knowledge Management Application

All respondents realised the importance of knowledge and learning in organisations. However, none of the respondent airlines runs knowledge departments. Human resources and IT departments are responsible for communication facilitation, information flows, learning activities, and reward system of their airlines. From the interviewees' points of view, they capture knowledge management as the issue of HR or IT or both HR and IT. (See the disclosure below for the response on knowledge management perception and understanding)

> **Auston:** *"XXX Alliance has a VP for Information Technology called XXX. He is based at our head office in Frankfurt, Germany."*

> **Max:** "*We are not big enough to have CKO. We have an HR department, and HR Manager who responsible for human resource and training.*"

Pemberton and Stonehouse (2005) view knowledge management as a socio-technical issue which creates an environment that facilitates knowledge sharing based on the awareness of the benefits of developing collective knowledge. Practically, the creation of facilitating a knowledge sharing environment is another basis of knowledge centric organisations. Parlby (2000) from KPMG (a consulting group) introduces the stages of the knowledge journey from knowledge chaotic, knowledge awareness, knowledge enabled, knowledge managed, to knowledge-centric organisations.

The criteria to benchmark the airlines' knowledge journey based on the interview contents is adopted from KPMG's key issues to the knowledge management programme. The criteria conditioned compliance with three or fewer issues-*knowledge chaotic type*, four or more issues drawn from at least two sections-*knowledge awareness type*, six or more issues drawn from at least three sections-*knowledge enable type*, more than two issues from each section-*knowledge managed type*, and matching with all keys are a *knowledge centric type* (See Parlby, 2000). Table 4-2 is annotated to show airlines' knowledge journey benchmark.

Table 4-2: Airlines' Knowledge Journey Benchmark

Criteria of KPMG Knowledge Journey Benchmarking	The Research Participants					
	Sara	**Max**	**Alis**	**Peter**	**Andrian**	**Luna**
1. People						
1.1 Implement KM training/awareness	N	Y	Y	Y	Y	Y
1.2 Appointing K officer and creating K centres	N	N	N	N	N	N
1.3 Incentivising and rewarding knowledge working	N	Y	Y	Y	Y	N
1.4 Building and developing communities of practice	N	Y	Y	N	Y	Y
1.5 Establishing formal KM networks	N	N	N	N	N	N
2. Process						
2.1 Benchmarking or auditing the current situation	Y	Y	Y	N	Y	N
2.2 Creating a KM strategy	N	N	N	N	N	N
2.3 Implementing new systems for communities of practice	N	Y	Y	N	Y	Y
2.4 Designing other KM processes	N	N	N	N	N	N
3. Content						
3.1 Creating a knowledge map	N	N	N	N	N	N
3.2 Implementing knowledge policies	N	N	N	N	N	N
3.3 Measuring intellectual capital	N	N	N	N	N	N
4. Technology						
4.1 Carrying out a knowledge system audit or assessment	N	N	N	N	N	N
4.2 Implementing ways to share best practice	N	N	N	N	N	N
4.3 Use of KM software (ex. Intranet or Groupware)	N	Y	Y	Y	Y	Y
Types of Knowledge Journey Benchmark	Chao	Ena	Ena	Awa	Ena	Awa

Source: Configuring data based on the criteria by Parlby (2000, p.23)

Notes: N = No, Y = Yes, Chao = knowledge chaotic type, Ena = knowledge enable type, and Awa = knowledge awareness type

From the table, the interview participating airlines that are in alliance networks are in the positions of knowledge awareness and enabled organisations. Payne and Sheehan

(2004), Strojny (2004), and Parlby (2000) characterise ***knowledge awareness organisation*** as a status of informal knowledge management implementation which contain knowledge focused practices in some operative areas while they differentiate ***knowledge enable organisation*** as a status of utilising knowledge management procedures and tools to benefit business obligations.

In accordance with the measurement issues, none of the respondents indicate a practice that can be valid in terms of knowledge management content. Under the issues of people, process, and technology, various conventional airline' practices correspond with key issues in the knowledge management programme. That is because people and technology criteria in the programme are the main components of airline service production whereas knowledge management process criteria are the systems that airlines condense on managing and improving performances (Doganis, 2006; Kleymann, 2005; Hanlon, 2000; Oum and Park, 1997)

These configurations are drawn from the explained knowledge management involvement of the interviewees' organisations. For instance **Sara**, general manager of all ground operations of the airline in Thailand, discloses the significant distance between the practices in her organisation and knowledge focused characteristics:

> *"Actually, at the head office, there is training but there are also limitations on language and vision of GM in Bangkok. They don't care...never give opportunities. ...not for office staff. But for cabin crews, technicians, they are frequently trained. ...for other departments, we are out of date. Actually, XXX uses good materials but it's because of the management level. knowledge won't flow. Although we have internet, distant calling is expensive ...we sent e-mails,... we get a reply mail that suggests us to call them instead."*

As for other participants, they indicate more positive views on the application to KM than the case of Sara. **Alis** describes the knowledge transfer tools' availability and knowledge activities in her organisation, which are under the characteristic of limited approaches to KM as

> *"We have monthly meetings...For sales and marketing, we have communications such as e-mail. We have news e-mails to announce what is going on. ... We are serious about knowledge management. We have a large number of training centres both in Bangkok and in Frankfurt. We have steps of training. If you pass this step, you can go to the next step. In Bangkok, we have a meeting every Monday evening in which we are trained. We separate meetings into departments and within departments. ... We don't have a knowledge manager."*

Andrian imparts similarly in terms of knowledge activities which can be concluded under the aspect of realising standard function of knowledge utilisation. His excerpts are presented below

> *"We don't have a policy to set a department or staff to manage knowledge, we have only CEO, CFO and CIO. ... new knowledge, new technology in operation...it should be encouraged, because it can support the company to be better. ...Actually, when airlines cooperate, they have to see the operations of each other,...when they have problem, they are always cooperate together. In the group of XXX Alliance, they have Managing Directors, Presidents. It has meetings every year about policy, new members, consideration of the group, how are our operations delivered. Top management has to attend."*

The description from **Peter** also provides insights into the limited level of KM application in his branch and cooperation with partners' both in the previous and the existing alliance networks. He states:

> *"We don't have CKO. I've heard about knowledge. I think in the airline industry, no one does it seriously. ... They use general technologies in cooperation. We have our own newsletter but not the group's."*

From the evidence, airlines have informal integration with knowledge management practices. In addition, the view to realise knowledge management as the traditional management perspective (HR or IT) could prevent organisations from following knowledge centric patterns and benefits. Nevertheless, various features in the airline industry , as mentioned before (such as focusing on training, heavy reliance on individuals and technology in distributing services, and joint learning to handle limitations of individual capacity and air service agreements) can create requisite learning and sharing knowledge factors as existing in knowledge-focused organisations (Nielsen, 2002; Parlby, 2000; Oum *et al*, 2000; Inkpen, 1998) .

Hereby, to answer the first research question on "what can alliance members learn?", the discussion in this section proposes the view that what alliance members can learn will be typically under the practices of informal knowledge management implementation.

4.3.2 Airline Alliances' Knowledge Sharing Reasons

Although objectives in collaboration and detail in the agreements are targeted on collaborative operation (Das and Kumar, 2007; Culpan, 2002; Hanlon, 2000), superior performance in specific business process of affiliated airlines within the particular market of each partner are the drivers to achieve the shared objectives and the key of alliances' successes (Kleymann, 2005; Evans, 2001; Doz and Hamel, 1998). In accordance with knowledge-based view (Wernerfelt, 1995; Barney, 1991), airline alliance is a method of learning and absorbing knowledge. In fact, operative and learning benefits are dependent in the case that updated and upgraded knowledge enables operative success.

Hence, from conventional operative benefits of collaboration, they involve airlines' expectations to learn about, learn from, and learn with their partners to operate their service production as well as to develop a new knowledge to overcome their capability limitations at the same time (Dussauge *et al*, 2000).

From the primary data, **Tim** concludes motives to collaborate with competitors that "*The main reasons are costs reduction, network expansion, overcoming restriction, and reduction of competitive force.*". From the comment by **Sara** that "*We want to continue our cooperation if XXX cannot fully operate by itself.*", the limitations of standalone operation is also the vital motive in alliance affiliation. Another three respondents below reaffirm and add the views to set up or join their alliance networks. The detail reflects learning benefits on collaborative activities to gain the targeted operative benefits.

Alis: "*to increase a number of customers in the case that an airline couldn't reach some destinations but other airlines in the alliance network do. We can help each other's sales, help each other cooperate, because some of our customers want to go to destinations that we don't fly. How can we do that? Setting up an alliance can reach wider. ... It is a joint customer base of airlines in the alliance. They are network and customer based expansions.*"

Max: "*As for the motives, I think there are 3. Firstly, in terms of service, ...We provide service in the aspect of seamless service. ...Using the same mileage collection programme. ...Secondly, it's about cost saving. ...To try to make it the lowest. To support negotiating power in buying. ...Thirdly, it is revenue enhancing for airlines in the group. Increasing revenue by linking jointed routes.*"

Auston: "*The main reasons are that with competition growing and the international traveler becoming more conscious of price and value for money, plus the need to keep their costs down, full service airlines... are increasingly finding that belonging to an alliance gives them added opportunities to not only take part in large cost saving projects, but to get more interline feed (interconnecting passengers) off other members of the alliance. In this way they can enhance their revenue.*"

From the four examples, the respondents from the different alliance networks describe similar reasons in affiliation. Based on the studies of Kleymann (2005), Doz and Hamel (1998), Contractor and Lorange (1988), Pfeffer and Nowak (1976) on alliance motives and the indications from the respondents above, airline alliance reasons under a knowledge sharing context highlight the issues of sharing knowledge to reduce risk, to extend economies (of density, scope, and scale), to develop technology, and to block competition.

Table 4-3: Airline Alliance Knowledge Sharing Reasons

	Knowledge Sharing Reasons for Airline Alliance			
Participants	**To Reduce Risks**	**To Gain Economies**	**To Develop Technologies**	**To Block Competition**
1. Sara	Learning to penetrate to a new market quickly and reduce uncertainty.	Sharing knowledge to cut cost and share codes.	To learn how partners develop their technologies.	Learning to create network connection and expand destination.
2. Max	Learning to reduce risk of unfamiliar market and investment in a new project.	Sharing knowledge to save cost while enhance revenue.	To jointly develop technologies.	Learning to use benefits of collaboration to expand power to block competition.
3. Alis	Learning about local conditions and partners' customers.	Sharing knowledge to increase aircraft load and cut cost.	To jointly develop technological platforms.	Learning to acquire more market share and react to competitive conditions.
4. Peter	Learning about local conditions from local partners.	Sharing knowledge to cut operative cost and configure joint activities.	To develop technological platforms.	Using shared knowledge to block competition by further expanding network destination.
5. Andrian	Learning about local conditions from local partners.	Sharing knowledge to increase aircraft load and cut cost.	To jointly develop technological platforms.	Learning to increase barriers for new entrance and leverage existing competitors.
6. Luna	Learning about local conditions from local partners.	Sharing knowledge to reduce operative cost.	To jointly develop technological platform.	Learning to expand size of network.

Table 4-3 presents the capture of airline alliance knowledge sharing reasons based on the composition of the interview outcomes with collaborative theoretical issues on alliance motives

From the presentation, their reasons are based on distinct characteristics of the airline industry such as being technology oriented, sensitive to demand fluctuation, and components of airline operation (slot allocation, traffic right, bilateral, and multilateral agreements) (Morrish and Hamilton, 2002; Hanlon, 2000; Doganis,1998; Oum and Park, 1997).

Collaborative benefits are also explicitly stated by the interviewee regarding overcoming the down turn of business from the threats in the industry. The difficult situation of this airline has allowed learning together with other partners in solving problems.

> **Luna:** "*XXX understands capabilities limitations of operations alone in a complex regulated industry. Alliance helps in cost minimisation and network expansion. ...particularly in recent times when it has been in Chapter 11 bankruptcy. It has received a great deal of moral and other support from XXX Alliance carriers.*"

Based on the evidence, the respondents cooperate with their competitors to learn and develop how to overcome limited capability of stand-alone operations in terms of regulations, operation rights, resources, and return on investment by sharing their operative patterns and learning about, learning from, and learning with their partners to handle with situations. For instance, Thai International Airways arranges seminars

regularly to educate its partners about business operation in Thailand (Thai International Airways, 2006; Bunjoungmanee, 2001).

Hereby, in terms of reflecting learning benefits from the indicated operative benefits in which are the results from knowledge sharing and creation, they are mainly derived in forms of network and customer based expansions (***learning about local conditions and partners' customers***), efficiency in resources utilisation (***learning how to effectively utilise resources cross function and in inter-organisational operation***), economies of density-scope-scale (***learning to increase operative efficiency and increase aircraft load***), developing new knowledge from each other's experience (***such as in developing new technology***), and increasing competitive and trading power (***learning how to use competitive power as a group to benefit all partners***). Therefore, the arisen issues in this section answer the research question in terms of the areas that alliance members can learn about, learn from, and learn with other partners to improve performance as well as create a new knowledge.

4.3.3 Satisfaction on Knowledge based Reciprocal Benefits

A number of the interview participants determine reciprocal benefits as the outcomes of the collaborations. They mention the views on reciprocal benefits as the descriptions of their alliance reasons. For instance, **Max** answers the question regarding the satisfaction on alliance benefits that "*Benefits are in those 3 parts.*" after he commented on the issues concerning the alliance reasons (network expansion, cost reduction, and revenue enhancement). The additional evidence from **Auston** also

affirms the relation between the satisfaction in collaboration, reciprocal benefits, and alliance reasons. He refers to the alliance reasons and the satisfaction on alliance benefits by indicating "*All of the above.*" (regarding matching the competitive circumstance, keeping the cost down, interconnecting passengers, and revenue enhancement) as the answer for the main reasons in sustaining the membership in his group. Moreover, **Sara** views the practice of "giving for taking" on reciprocal benefits between alliance partners that "*The reciprocal benefits are very close. What we get from them, they also get from us.*". This suggests the satisfaction is for the similar returns of the benefits for all counterparts.

Doz and Hamel (1998) state reciprocal benefits occur when all counterparts gain benefits from collaborative activities. From reviewing on literatures such as those of Chatterjee (2007), Nielsen (2002), Passfield (2002), Zuber-Skerritt (2002), knowledge based reciprocal benefits can be viewed as learning synergy. In this research project, knowledge based reciprocal benefits are learning benefits and also operative benefits that are derived from learning and sharing knowledge between partners. Therefore, the concept of learning synergies integrates the relevance of learning and operative benefits.

Notwithstanding the positive views on the gained benefits from collaboration of the interviewees as stated earlier, satisfaction on knowledge based reciprocal benefits is also depended on the balance between expectation and actual benefits from the gained knowledge. Practically, the satisfaction on reciprocal benefits can affect on relationships in collaboration which have the influence on what members of an alliance network can learn (Das and Kumar, 2007; Smoliar, 2003; Inkpen, 1998). In

several cases, the relationship between expectation and actual benefit consist of a gap. The incurred gap can cause dilemma in alliances and might lead to failure of the group or decrease in number of partners (Doganis, 2006; Hanlon, 2000; Oum *et al*, 2000; De-Wit and Meyer, 1994). These circumstances happen regularly in the airline industry as indicated in the section of alliance lessons of literature review Chapter. As mentioned, the satisfaction on reciprocal benefits is also a critical factor to identify what airline alliance partners can learn when it can influence on relationship patterns related to efficiency in sharing knowledge.

Therefore, the consideration on fact and the empirical evidence are embraced in the investigation. In terms of utilisation of the outcomes in discussing the issue of satisfaction on reciprocal benefits, other than to answer the research question on what alliance members can learn according to the objective of the investigation in Phase 1, the results will be employed in co-consideration on the issue of KM dynamics in each group that the participants are in. Table 4-4 presents the elaborations of the satisfaction regarding the reciprocal benefits from the interview participants.

Furthermore, the disclosure fact of the participants' organisations in the collaboration provides the related reasons for alliance network and membership sustaining. The derived facts from the interviews are concluded in Table 4-5.

Table 4-4: The Elaborations of the Satisfaction regarding the Reciprocal Benefits from the Interview Participants

Participants	The Indicated Satisfaction on the Reciprocal Benefits
1. Sara	Network expansion, technological development, and marketing.
2. Max	Network expansion, cost reduction, and increasing revenue.
3. Alis	Network expansion and increasing customer.
4. Peter	Marketing.
5. Andrian	Regulations, network expansion, cost reduction, and revenue enhancement.
6. Luna	Cost reduction and network expansion.

Table 4-5: The Disclosure Facts Concerning the Participants' Organisations in Their Collaborations

Participants	Status in the Network	The Movements of the Collaborations	Situations to Depend on Network
1. Sara[1]	N/A	Not in any network in the time of the interview setting	N/A
2. Max	Co founder	Never change network	Not specific
3. Alis	Co founder	Never change network	Not specific
4. Peter	Affiliated airlines	Change once	Not specific
5. Andrian	Co founder	Never change network	Not specific
6. Luna	Co founder	Never change network	Under chapter 11 bankruptcy (financial status is supported by partners)

Note: 1). Airlines of this participant does not ally with any network in the year that interview 1 was conducted but will join an alliance network in 2008.

Focusing the data on the satisfaction from the reciprocal benefits and the facts on collaboration in the annotation in Table 4-4 and 4-5, some airlines change group for a range of reasons but still want to be in some other alliance networks that are more suitable for their conditions and requirements. This understanding is reflected from the comment from **Peter** that:

> "*We closed XXX alliance because members in the group over expect and look too deep in the terms of the alliance. ... At this moment, XXX already sold all of XXX's stocks and joined with XXX alliance.*"

In the case of general satisfaction, most respondents are in their first alliances and currently satisfied to continue their partnership with their existing networks. It reflects their capability to learn and adjust their expectation in collaboration with other airlines (Khamseh and Jolly, 2008; Pemberton and Stonehouse, 2000; Senge, 1992). In addition, it is also implied that they are satisfied with the conditions and reciprocal benefits in their groups. This conclusion is drawn from the expression by the respondents such as **Alis**, who says "*We are happy in this group and satisfy with reciprocal benefits.*", **Max** replies on the question that asked whether his organisation satisfies the reciprocal benefits from the collaboration as "*Yes, we do. Now, it is a success that XXX is in XXX alliance and also the success of every airline in the group.*"

As for the identified reciprocal benefits from the interview contents, the respondents relate the benefits to alliance reasons (as discussed in the former section). The indicated satisfaction by the respondents is derived from the ability that the partner organisations gain from being a part of alliance networks such as global destination,

seamless service, code sharing, purchasing and negotiation power, cost efficiency, and revenue enhancement.

For some airlines, they could have situation that increases their dependence on alliance networks which increases the potential to tie up closer to their existing alliance. The case that is revealed by **Luna** supports this notion. She states "*I think the airline is happy with it, particularly in recent times when it has been in Chapter 11 bankruptcy in the United States. It has received a great deal of moral and other support from XXX Alliance carriers.*". Thus, the evidence shows the presence of appreciation and the high possibility of compromising in collaborative activities. Referring to the issue of learning conditions that shape behavior by Santrock (1997) combining with influences of morals in job-task operation by Komin (1990), compromising in collaborative activities will positively affect relationship and willingness to share knowledge in the present and the future.

From the interviews, airlines that have never changed the collaborative network are the co founder of the group. They recognise the benefits from collaboration similarly as indicated in Table 4-4. In addition, they embrace some issues of a competitive paradigm for the greater benefit of the group and their potential benefit in the long term. The arisen view can be illustrated under the case of Thai International Airlines, Lufthansa, and United Airlines for instance. They have been in the same network officially since 1997 (TG update, 2002). They joined with members that have overlap dominated markets of the existing partners (such as Thai International Airlines and Singapore Airlines in Southeast Asia, United Airlines and US Airways in North America (Hanlon, 2007; Bunjoungmanee, 2001; Oum and Zhang, 2001)).

The continued relationships embrace learning about learning and an insight on the criticality of knowledge based reciprocal benefits from the overlap service routes. This is partners focus on creating and sustaining knowledge networks in a scenario of benefits from complementary knowledge network (Nielsen, 2002; Inkpen, 2000; Khanna *et al*, 1998). The quote below proposes the expression that realising on the returned benefits to individual organisation from collaboration over overlap service routes.

> **Andrian:** "*As for airlines, they perceive the entry of XXX as network expansion. XXX have a large number of networks in Australia. XXX can code share. XXX says XXX has not a lot of routes to Australia. When XXX is in, we are welcome. We can expand networks. If XXX had joined with other groups, it's not so good for XXX alliance.*"

In conclusion, other than the occurred benefits (as discussed in the previous section), satisfaction on operative and learning benefits is challenged on the ability and willingness to learn together within alliance networks as much as on the allowance for partners to learn about and learn from other partners. And, these are factors that can be used to explain the consideration of collaborative partners on the territories of knowledge sharing as well as the consideration to prolong alliance affiliation when the satisfaction also affects knowledge interactions between them. In addition, it is another important factor for the investigation on dynamics of AKM (in which is the objective of this research project) in terms of what alliance members can learn.

4.3.4 Knowledge Sharing Channels

Sharing assets and capabilities in strategic alliances are in terms of both direct and indirect knowledge based resources. From the interviews, the respondent airlines share with and learn from their partners in private and social activities both in and off duties. Based on the empirical evidence, channels in sharing knowledge are configured into three kinds as social activities, general technology, and in house technology as presented in the Table 4-6.

In both individual and social activity learnings, ICTs are the crucial learning facilitated tools. For the association of in-duty activities, the respondent airlines transfer their knowledge in inter-organisation training, operating joint activities, meeting, seminars, conferences, and extra cooperative airline service operation. The elaborations below reveal in-duty practices where knowledge is circulated.

Sara reveals the routine of in-duty activities association between her and other organisations as follows

> "*Externally, we do things according to other airlines such as meetings for every airline in Thailand monthly, meeting with agents, with IATA also monthly. As for operations at the airport we do that monthly too. Reservation systems also have monthly meeting.*"

Table 4-6: The Channels in Sharing Knowledge between Airlines

	Channels in Sharing Knowledge		
Participants	**Social Activities** (Seminar, Conference, etc.)	**General Technology** (e-mail, telephone, Fax, etc.)	**In-House Technology** (GDSs, Starnet, etc.)
1. Sara	Ordinary cooperation and informal social activities.	Keen on traditional technology.	Not emphasise
2. Max	Emphasising on both formal and informal social activities. Inside and cross organisational training are vital.	High level of new communication technology installation organisation.	Highly emphasise to correspond with operative needs.
3. Alis	Applying arranged group assignment in Intra-organisational training.	Encouraging technological employment in all operational levels.	Joint develop with partners to reduce cost.
4. Peter	Condensing in-house training. Inter-organisational social activities are on selective basis.	General Technologies are used in daily cooperation.	Not indicated by the participant.
5. Andrian	Social activities of both intra and inter-organisational levels are extensively encouraged.	New Technologies are always introduced and employed.	Joint develop with partners to reduce cost.
6. Luna	Systematic training programmes are the foundation of intra and inter-organisational operation.	Advance technologies are the vital tools in all level cooperations.	Joint develop with partners to reduce cost.

Alis provides the example of the in-duty association within her organisation as

> "*In Bangkok, we have a meeting every Monday evening in which we are trained. We have separate meetings depending on departments and within a department. For example, if the sales and marketing department has new promotion campaign, the service department has to be trained and vice versa to link information and knowledge. For aviation technicians, they are trained in Germany.*"

Max mentions his alliance network's social activities such as meetings, training, and seminars both in Thailand and at the head office below:

> *"We plan at least 4 times a year. It is for XXX alliance in Bangkok. At the head office, I understand that planning meetings are held quarterly, too. The Governing Board of each airline comes and joins in.*"

Auston explains the in-duty association within his alliance network in that

> *"We have two Chief Executive Board meetings a year. At these meetings the CEOs of the 16 existing airlines (to be 17 by the end of the year and 18 next year) set policy and sign off on major expenditure items.*"

As for the association in off-duty activities, their knowledge is transferred by association in social activities (both personnel arrangement and arranged by airlines), such as sport, lunch, newsletters, e-mail, etc. The off-duty associations provide opportunity for individuals to create and progress relationships that will facilitate knowledge transfer. This can be illustrated from the virtual off-duty association in **Sara**'s department. She indicates "*For sales and marketing, ... We have a news e-mail to announce what is going on, a new employer, for example.*".

Fenwick and Mcmillan (2005) argue "knowledge interaction is the possible source of learning". The evidences above provide the characteristics of knowledge interactions and connection of learning and knowledge sharing in intra and inter-organisations. Moreover, these evidences indicate types of the involved knowledge in the respondents' knowledge interactions. According to Nonaka and Teece (2001), Nonaka (1991), and Polanyi (1966) on the concept of tacit and explicit knowledge, airlines' knowledge is in the senses of content (explicit), people and process knowledge (tacit). Airlines' content knowledge is in the form of records, reports, and instructions while knowledge of airlines' employees is in terms of ground knowledge and job processing skill (Jasimuddin *et al*, 2005; Kleymann and Seristo, 2004; Davenport and Prusak, 2000).

To capture the respondents' knowledge sharing practices with knowledge sharing channels based on types of knowledge, tacit and implicit knowledge is shared and absorbed in social activities such as job association, whereas explicit knowledge is frequently circulated by ICTs , as has been highlighted by all interview participants in terms of both general and in-house technologies. From the interviews, the evidences on the cases of utilising ICTs as another knowledge sharing channel are presented below:

> **Peter:** "*Use of general technologies such as telephone, fax, teletext, e-mail, mail depends on case. These are for management and operation. For aviation technologies, they are different.*"

> **Auston:** "*We have a range of IT platforms that we use. One of the most effective is XXX,... A common IT package is now under way which would allow XXX alliance to have its own IT platform to do*

> *reservations and track other products such as frequent flyer points. It is at an early stage. From next year we will have a new payment and reporting system for corporate clients."*

Moreover, the inability to employ or develop communication technologies affects negatively on the potential benefits of knowledge transfer in co-operation. **Sara** discloses that "*... has lower technologies than other worldwide airlines, systems included booking are just developing although we have operated for a long time. ... XXX's systems are out of date. It is a system that XXX used 10 years ago.*"

To discuss the evidences of technological knowledge sharing channels above with the knowledge forms and knowledge conversion, the elaborations from the interview participants provide insight in terms that efficient technologies can facilitate the flow of transferred knowledge while the inefficient technologies could inhibit the potential of benefits from alliance knowledge transfer. Regarding tension from the senses of competition and co-operation within alliance (Khanna *et al*, 1998), explicit knowledge is more manageable and controllable in alliance knowledge flow by communication technologies than tacit knowledge because the latter is frequently shown in the way individuals perform knowledge activities. Nevertheless, communication technologies have critical roles in facilitating knowledge conversion from tacit to explicit knowledge.

For instance, referring to Nonaka and Teece (2001) on the issues of process knowledge in conjunction with Hanlon (2000), Purdie (2000), and Gillen *et al* (1985) on airline operations, process knowledge exists in the production process of airline services. The production process of airline service is engaged with the way

knowledge workers combine guideline knowledge, ground knowledge, and required knowledge together. Hence, the method and skill (how to) in the production process can be absorbed in addition to jointly created knowledge by partners in alliance project associations.

To relate with the arisen concept with the investigated cases, other than Thai International Airlines, all airline respondents are branches in Thailand. All airline respondents cooperated with Thai International Airlines, particularly, in ground handing and aircrafts maintenance. Thai International Airlines, as a flag carrier in Thailand, has alliance agreements and sub agreements with other airlines outside its alliance network. When cross network cooperation is occurred, it is related to the proportion and channels of knowledge sharing with alliance and sub agreement partners. Therefore, although operative benefits from knowledge sharing are clearly limited by types of agreements as stated by the interview participants (alliance agreements or sub agreements), synergistic learning benefits are also related with a degree of individual knowledge interactions.

The arisen issues in Phase 1 provide a knowledge based view of airline alliance networks in terms of the degree of knowledge management implication in the airline industry, potential benefits, and factors of learning which are the components of what alliance members can learn. However, forces that could affect quality and direction of knowledge flows need to be co-considered with the findings in this phase.

Hence, the investigation regarding on the dynamics of knowledge sharing towards collaborative organisations was arranged in Phase 2, and the examination towards alliance network was set in Phase 3.

4.4 Summary

The objective of Phase 1 is to understand the fundamental issues of knowledge sharing in airline alliances by identifing the issues regarding dynamics of AKM in term of "what can alliance members learn?". In Phase 1, semi structured interview is the instrument for collecting data. From utilising Nudist in data analysis, the discussion issues are on airlines' knowledge management application, airlines alliances' knowledge sharing reasons, satisfaction on knowledge based reciprocal benefits, and knowledge sharing channels between partners. The discussions are concluded below:

- Knowledge management applications in airline alliance are in knowledge awareness and knowledge enable stages. Then, what alliance members can learn is typically under the practices of informal knowledge management implementation.
- Learning opportunities in airline alliances are in cooperative activities to reduce risks, to gain economies, to develop technologies, and to create greater competitive advantage. Hereby, these issues respond to the "what" that alliance members can learn in airline industry.

- Knowledge based reciprocal benefits are important to relationships within alliance networks and partially affect willingness of what alliance members can learn.
- Association and technologies are the main instruments of knowledge sharing. As they are the channels of alliance knowledge sharing, they offer the further explanation on "what alliance members can learn". Therefore, these channels indicate the areas for further investigation to answer other research questions.

From the investigation in Phase 1, the objectives of this project based on the first research question (what can alliance members learn?) have been achieved by understanding knowledge that members of an alliance can learn (KM application levels and alliance motives) and sorts of learning opportunities (satisfaction on reciprocal benefits, and knowledge sharing channels). However, to fulfill the objective of this study and the identified knowledge gaps in terms of dynamics of AKM, their roles, and their relationships, further investigation is required, based on the findings from Phase 1. In addition, to answer the research questions regarding "how do they learn?"(Q2) and "how does the learning happen?" (Q3) to further understand dynamics in AKM, the issues that are needed for further investigation are:

- The ways alliance partners learn which can be investigated from their operations and management system. (to answer Q2)
- In circumstances of knowledge conversions, whether all knowledge conversions are performed differently in intra and inter-organisation knowledge sharing? (to answer Q2)

- Whether and how the quality of technological utilisation relates to the quality of the derived knowledge? (to answer Q2 and Q3)
- What are the characteristics of organisational environments that facilitate alliance knowledge flow? (to answer Q3)
- What are the other knowledge hoarding factors in alliance knowledge circulation? (to answer Q3)

The issues that have arisen above need further investigation and these are utilised in designing the investigation in Phase 2 and 3.

Chapter 5

The Data Analysis Phase 2: The Questionnaire Survey with Airlines

> "...*learning organisations, ... where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together.*"
>
> *Senge (2006, p.3)*

5.1 Introduction

The understanding, as well as the answer to questions from Phase 1 is highlighted in "*what alliance members can learn*" in terms of characteristics of KM in the airline industry, knowledge sharing issues based on alliance motives, enduring alliance knowledge sharing opportunity from alliance satisfaction, and knowledge sharing tools. These are jointly determined in designing the 48 statements of the Likert-scale (part I) and the open-ended question (part II) in the questionnaire.

In Phase 2, the objective of the investigation is to trace dynamics in AKM in terms of "*how alliance partners learn*" and "*how the learning happens*". Specifically, the focus is on the perspectives of airlines in alliance networks. The investigation processes in this phase are under the quantitative method and the acquired data is analysed by statistical tests. The conditions in employing the statistical tests are

concluded in section 5.2 (*tools of analysis*). In the case of analysing statistical results, the issues are located in section 5.3 (*data analysis*). The main discussed issues are learning culture and management system, intra and inter-organisation's ICTs utilisation, and knowledge sharing activities.

5.2 Tools of Analysis

In this section, the process of this survey is explained and focuses on methods in preparing the results from the questionnaire including issues on characteristics of data, organising and processing data by using statistical software and tests. However, in this section the presentation will be in terms of utilisation rather than technical and theoretical issues of the tests already introduced in Chapter 3. The processes of utilising statistical tests in quantitative data analysis are concluded in Table 5-1.

The 48 statements in Part 1 of the questionnaire were considered as ordinal variables according to the rank nature of the Likert Scale. Initially, frequencies and descriptive statistical tests were run in order to use the results in considering the further utilised tests, frequency of phenomena, variation, and dispersions of variables. Before selecting the suitable inferential statistical tests, according to the 48 statements, the raw data was organised into three formats regarding natures of the participants.

The three formats are ***Set 1*** which considered the statements by three networks as Star-Oneworld-Sky Team, ***Set 2*** which considered the statements by levels of the respondents' responsibility according to their job titles as management and operative

levels, and ***Set 3*** which considered by characteristics of job-task based on respondents' office locations as town office's job-tasks and airport station's job-tasks.

Table 5-1: The Processes of Quantitative Data Analysis

The Processes of Quantitative Data Analysis
1). Run Frequencies and Descriptive statistical tests.
2). Organised data into three sets as alliance networks, job-task responsibilities, and office locations.
3). Utilised Histogram graphs, Kolmogorov-Smirnov test and measurements of central of tendency to consider the suitable statistical tests.
4). According to the conditions of nonparametric tests, Kruskal-Wallis test was run for data set 1 and Mann-Whitney test was run with data set 2 and 3.
5). Run Spearman's rho Correlations to identify relationships between dependent variables (the relation between statements in questionnaire based on the results of statistical test).
6). Run reliability test to reassure the reliability between the focuses on intra and inter-organisations towards the investigation issues.

Organising the data into these formats helps in identifying the suitable statistical tests according to the number of the embraced variables (such as three variables from three networks, two variables from two levels of responsible job-task, and two variables from job-tasks at two locations of office). In addition, it will provide more specific details and assist in understanding the statistical results by relating the focused nature of the respondents in the analysis.

Herein, to identify the suitable statistical tests for each set of the organised data, Histogram graphs and Kolmogorov-Smirnov tests were run to deliberate together with measurement of central tendency (order of mean, mode, and median but focus on mode as primarily source of central tendency). Because the characteristic of ordinal scale, slightly skewed distribution, and values of mean- median-mode are not tremendously different, nonparametric tests are more suitable (Hair *et al*, 2003; Sekaran, 2000; Cramer, 1998).

For Set 1, considering data by three networks, the Kruskal-Wallis Test was employed. For Set 2, considering data by management and operative levels of respondents' responsibility, the Mann-Whitney test was run. For Set 3, considering data by characteristics of job-tasks via office locations, the Mann-Whitney test was utilised. The tests for the three sets of the organised data were test at 5 % significant level.

In addition, dependent variables were identified their relationships by Spearman's rho correlations in responding to data natures in which were suitable to non parametric tests. Correlations at 1% level (2-tailed) were utilised in the analysis to ensure the accuracy between the identified related issues from the calculation.

In the questionnaire (See in Appendix B), statements related to learning culture and management system within the organisation were arranged in ***section A***, statements regarding information and communication technology within the organisation were indicated in ***section B***, statements concerning knowledge sharing within organisation were contained in ***section C***, statements about learning culture between organisations and management systems of alliance networks were grouped in ***section D***, statements

related to information and communication technology joint development were arranged in ***section E***, and statements on knowledge sharing between organisations were placed in ***section F***.

A reliability test was employed in order to identify reliability within and between sections. The statements in each section have acceptable reliability (0.649 in Sections A, 0.737 in Section B, 0.701 in Section C, 0.653 in Section D, 0.772 in Section E, and 0.792 in Section F). As Section A, B, and C are regarding intra-organisational issues and Section D, E, and F are related to inter-organisational issues, the former group has 0.856 and the latter has 0.875.

By considering the investigated issues, the reliability can be tested in three groups as learning culture and management system, ICTs issues, and knowledge sharing activities. The first group (Section A and D) has 0.738. The second group (Section B and E) has 0.785. The third group (Section C and F) has 0.800. These arrangements and the results of the reliability test will be utilised in organising the analysis.

As for part 2 of the survey, comments on difficulties on information accessing and distributing within alliance networks were processed by organising the comments into three issues of knowledge flow obstructions. They are quality of distributed information, quality of information distribution, and knowledge hoarding behaviours.

5.3 Data Analysis

In Phase 2, the outcomes from non parametric tests are initially discussed in three analysing themes based on groups of the common investigated issues of learning culture and management system, ICTs utilisation, and knowledge sharing activities.

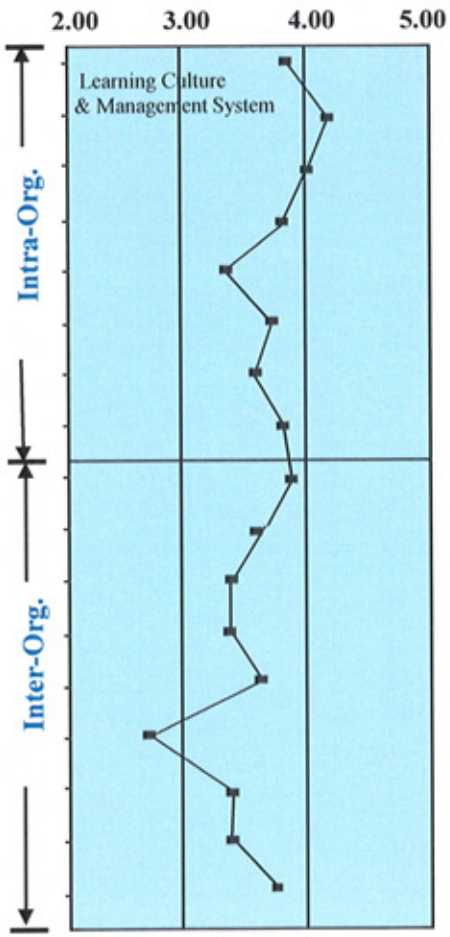
The critical values from the statistical tests on three data arrangement formats (See Figure 5-1, 5-3, and 5-5), the consideration on descriptive statistic towards the seven groups of data (See Figure 5-2, 5-4, and 5-6), and the correlation coefficient outputs are subsequently discussed under three main analysis themes below.

5.3.1 Learning Culture and Management System

Figure 5-1 illustrates the statistical results on intra and inter-organisational learning culture and management system. In the figure, the significant results are indicated by S and highlighted in red. As for the descriptive statistical results, they are presented on graphs into seven groups of data under the three formats of data organisation in Figure 5-2.

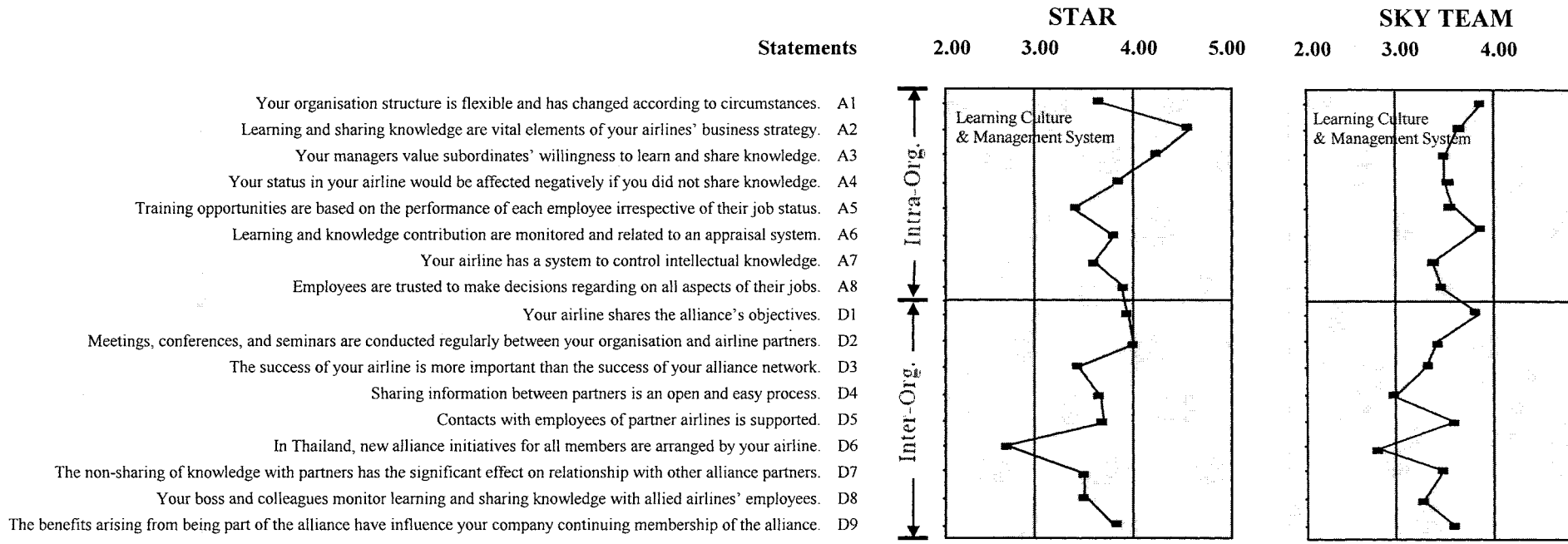
Figure 5-1: The Statistical Results Conclusion for Sections A and D

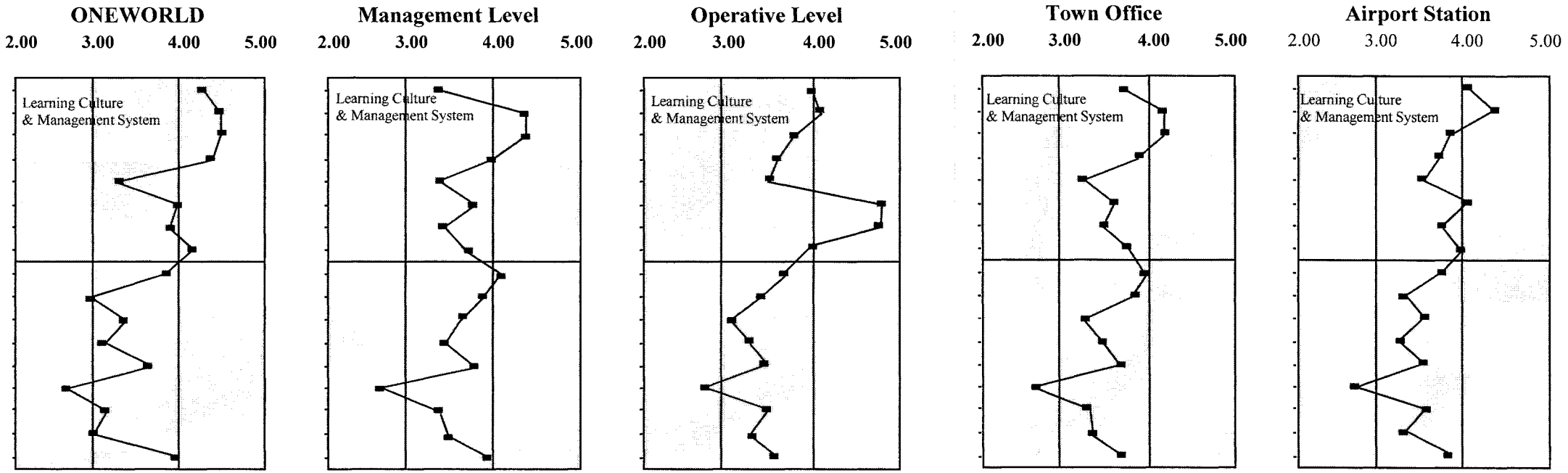
Statements		Set 1* (Kruskal-Wallis Test)	Set 2** (Mann-Whitney test)	Set 3*** (Mann-Whitney test)
Your organisation structure is flexible and has changed according to circumstances.	A1	X	X	X
Learning and sharing knowledge are vital elements of your airlines' business strategy.	A2	S	X	X
Your managers value subordinates' willingness to learn and share knowledge.	A3	S	S	X
Your status in your airline would be affected negatively if you did not share knowledge.	A4	X	X	X
Training opportunities are based on the performance of each employee irrespective of their job status.	A5	X	X	X
Learning and knowledge contribution are monitored and related to an appraisal system.	A6	X	X	S
Your airline has a system to control intellectual knowledge.	A7	X	X	X
Employees are trusted to make decisions regarding on all aspects of their jobs.	A8	X	X	X
Your airline shares the alliance's objectives.	D1	X	S	X
Meetings, conferences, and seminars are conducted regularly between your organisation and airline partners.	D2	S	X	X
The success of your airline is more important than the success of your alliance network.	D3	X	X	X
Sharing information between partners is an open and easy process.	D4	X	X	X
Contacts with employees of partner airlines is supported.	D5	X	X	X
In Thailand, new alliance initiatives for all members are arranged by your airline.	D6	X	X	X
The non-sharing of knowledge with partners has the significant effect on relationship with other alliance partners.	D7	X	X	X
Your boss and colleagues monitor learning and sharing knowledge with allied airlines' employees.	D8	X	X	X
The benefits arising from being part of the alliance have influence your company continuing membership of the alliance.	D9	X	X	X



Notes: * represents data on alliance network format, ** represents data on managerial responsibility format, and * represents data on office location format**

Figure 5-2: The Conclusion of Descriptive Statististic for Sections A and D in 7 Groups of Data




ONEWORLD
2.00
3.00
4.00
5.00
Learning Culture
& Management System
Management Level
2.00
3.00
4.00
5.00
Learning Culture
& Management System
Operative Level
2.00
3.00
4.00
5.00
Learning Culture
& Management System
Town Office
2.00
3.00
4.00
5.00
Learning Culture
& Management System
Airport Station
2.00
3.00
4.00
5.00
Learning Culture
& Management System

Operational Policy and Job-Task Interactions

From the survey, the majority of the respondents perceive learning and sharing knowledge as vital elements of airlines' business strategy (from the results on statement A2). This viewpoint has high potential to be reflected from the culture of the airline business. According to the basic natures of airline operations which heavily rely on employees as service distributors (Kleymann, 2005; Hanlon, 2000; Oum *et al*, 2000), training has been a vital tool for airlines to constantly increase service standard.

The survey result indicates airlines' management staff value subordinates' willingness to learn and share knowledge (from the results on statement A3). Nevertheless, from Figure 5-2 in accordance with formats of data arrangement regarding the outcomes of the data groups of Star Alliance-Oneworld-management level-and town office staff, they have higher average (distribution value) on this positive outcome than the data sets of Sky Team-operative level-and airport station staff.

In terms of controlling learning behaviour, despite the absence of formal knowledge criteria which was identified from the investigation in Phase 1 (informal KM integration), airline employees' learning and knowledge contribution are monitored and related to airlines' appraisal systems from performances on job processing and skill development (from the results on statement A6).

To consider the participants by their office locations (town office and airport station) in corresponding to characteristics of employees' job tasks in which employees at the

airport have more sense of operational job activities than employees at town offices, the outcome on the issue of learning and knowledge contribution related with an appraisal system has statistically significant difference between employees in the two office locations (at town offices and at the airport station).

Further approaches on statistical calculation on midpoint of the distribution shows employees at the airport have higher distribution of agreement on the relationship between their knowledge behaviour and airlines' appraisal system than town office employees. The reasons behind these differences under a unified corporate culture could involve the characteristics of the job at the airport are more operational and grounded on individuals' interactions which learning and sharing knowledge devotion are more obvious (Hanlon, 2000; Hofstede, 1993; Gillen *et al*, 1985). Consequently, employees at the airport are expected and forced by nature of their work to distribute tacit knowledge most of the time during their job processes and associations.

In accordance with the concept of values in sharing knowledge by Cook and Cook (2005) and the arisen indication from the survey on the presence of the system to control intellectual knowledge (statement A7), the participants at operative level provide the most significant positive attitude. These evidences show the organisational limitation on extrinsic value in sharing knowledge to be under operational policy. Moreover, on the agreement on the statement that boss and colleagues monitor learning and sharing knowledge with allied airlines' employees (from statement D8), it also affects on the values in the sharing of knowledge between collaborative organisations.

From the survey, the outcomes from statistical calculations and correlation coefficient regarding the value on subordinate sharing knowledge behaviour between airlines in alliance networks, attitude towards sharing idea with competitive partners, and relation formats between airline partners suggest that knowledge flows on collaborative responsibilities are facilitated by degree of social relationship and connection. This outcome from the survey corresponds with theoretical concepts regarding learning culture and provides specific detail in terms of what and how values in alliance networks influence knowledge flow. The discussions on these issues are presented on paragraphs below.

The Significance of Thai Social Relationship

The relationship of the variables from the survey (among the issues of the values on knowledge sharing of subordinates, sharing ideas with competitive partners, and relationship formats between airline partners) relate to distinctive characteristics of Thai people in the ways they share knowledge. The evidences from the empirical research are discussed below:

- Status would be affected negatively by unshared knowledge (statement A4).

  : *To be accepted in society, other than a concern on task achievement, the proper conducts of Thai distinctive characteristics such as gratefulness and considerated are critical (Swierczek, 1997; Komin, 1990).*

- Learning and knowledge contribution are monitored and related to appraisal system (statement A6).

  : *The proportion of the balance between organisation benefits and Thai values affect the presence of knowledge encounters in formal and informal communities (Sathaporn, 2006; Noypayak and Speece, 1998).*

- Employees are trusted to make decisions on job-tasks (statement A8).

  : *Employees are provided opportunity to integrate with the influence of charisma, gratefulness, considerate, and face-saving in their knowledge* activities (Rodsutti and Makayathorn, 2005; Komin, 1978).

- The non-sharing of knowledge with partners has an effect on relationship with other alliance partners (statement D7) but the success of airlines is more important than the success of the alliance network (statement D3).

  : *In this case, the complex relationship between distinct Thai characteristics of charisma, gratefulness, considerate, and face-saving can create social relationships that support and facilitates knowledge sharing (Komin, 1990 and 1978).*

The indications from statistical results which lead to the understanding above are based on the implication with the literature. Stonehouse *et al* (2001) and Stonehouse and Pemberton (1999) indicate knowledge flow facilitation is incorporated with culture, structure, and infrastructure in which facilitative status has an important role in fostering intra and inter-organisational learning and knowledge creation. Hence, in

sharing knowledge, particularly, between organisations under the context of Thai culture, social relationship and connection could be an explanation for degrees of efficiency in collaborative knowledge system.

More specifically, task achievement alone is not functional in Thai organisations (Komin, 1990). Swierczek (1997) studied the Asian cultural system which affected international joint venture and defined Thai culture as "*affiliate oriented*" while they defined others such as Singaporean and Malaysian as "*achievement oriented society*". In fact, social relationship connection is rooted in Thai personal life as well as working life. "Baramee" (charisma), "bunkhun" (gratefulness), "kraengchai" (considerate), and face-saving are distinctive characteristics of Thai people and are the basis of social relationships and connection value (Sathaporn, 2006; Rodsutti and Makayathorn, 2005; Noypayak and Speece, 1998; Komin, 1978).

Based on the primary research, other than the perspective of the suitable job-task operations, the distinct Thai characteristics could facilitate the flow of knowledge between organisations (Cook and Cook, 2005; Komin, 1978). Therefore, a good social relationship between organisations within a collaborative group could increase willingness to share knowledge, boost helpfulness and cooperation, and extend extra role association (Somoliar, 2003; Noypayak and Speece, 1998). Therefore, social relationships under the shared interests from collaborative responsibilities are the critical reinforcement in sharing knowledge within alliance networks.

Leadership and Staff Empowerment

The result from the Kruskal-Wallis test suggests that the three airline networks value learning and sharing knowledge in different degrees (from statement A2). In terms of the importance of training which is inseparable from airline culture (statement A5), the difference between the three networks could arise from learning and sharing knowledge in daily operations (Boyd, 2001).

Regarding Nonaka *et al* (2000)'s roles of leadership on organisation's knowledge-based culture and Senge (2006)'s roles of leadership on creating learning organisation, the findings from this survey confirm the influence of leadership in knowledge sharing on intra and inter-organisational learning culture and vice versa. Between networks, positive vision and support on learning and sharing knowledge of organisation's leader is as important as attitude and encouragement on inter-organisation learning and sharing knowledge of collaborative group's leader and airlines' collaborative representatives (derived from the results of statement A3, A6, A8, D5, and D8).

Related with the issue of the knowledge journey benchmark in the former chapter, the establishment of learning environments by leaders in intra-organisation level leads other representatives from affiliated organisations to practice some sense of a knowledge sharing habit according to their organisation knowledge application levels. The statistical outcome provides a deeper insight into the value placed by managers of the three networks on their subordinates' willingness to learn and share knowledge differently in the same direction to their different perception on importance of

learning and sharing knowledge in their business strategy (from the correlation results between statement A3 and A2).

Moreover, the Mann-Whitney test on attitudes between management and operative staff renders a significant difference between them. Although both management and operative staff agree on an existence of value from subordinates' knowledge contribution, airline managers perceive themselves to value subordinates' willingness to learn and share knowledge in a higher proportion than staff perceptions on their superiors' valuation in term of their willingness to learn and share knowledge (based on the significant from statistical tests on statement A3).

The indication could be questionable on the distinctiveness of airlines' leaders' expression and commitment to show support and recognition regarding subordinates' exchanging knowledge and knowledge creating behaviour. According to Nielson (2005) and (2002) on synergy in alliance networks, the issue could illustrate the discriminated views of benefits from learning and sharing knowledge (*traditional view* in focusing on operative benefits and *holistic view* in focusing on both operative and learning benefits).

The significant attitude differences between staff in management and operative levels on sharing the alliance's objectives could influence on cooperative practice between airlines' and its partner staff in certain activities (from statement D1). Empowerment and encouragement can discipline individuals to develop learning habits in order to expand the potential of intra-organisational learning in strategic and tactic levels

(Jones *et al*, 2003; Johnson, 1998; Conger, 1988). Then, they are also the determinants of inter-organisational learning.

The differences on sharing alliance's objective could affect quantity of devotion and quality of cooperative outcomes from hoarding knowledge flows when employees are empowered on their responsible jobs. The degree and selected activities of airlines' objective sharing in alliance networks are driven from benefits of being alliance partners (Kleymann and Seristo, 2004; Escriba-Esteve and Urra-Urbieta, 2002). This fact influences ease of knowledge flow, cross organisational contact encouragement, availability of information for partners and partners' information, and reliability of provided information.

Besides, Spearman's rho correlation statistical calculation at 2-tailed significance suggests a negative direction correlation (opposite) on "influence on partnership status from benefits of network member" (D9) and "the allowance on sharing information between partners" (D4). It means the greater the importance of collaborative benefits on membership status, the less discouragement on sharing knowledge between partners.

In comparison to the central tendency of distribution on agreement range of the two issues above, while the calculation indicates rank of "agreement" on the influence of collaborative benefits on membership status (satisfaction on reciprocal benefits) and "neutral attitude" on sharing knowledge discouragement to partners (competitive paradigm), the indication from correlation coefficient provides the possibility of knowledge hoarding between partners in airline alliance networks. Regarding the

controversy between Inkpen (2000) and Khanna *et al* (1998), the discussed issue above reassures the view of Khanna *et al* (1998) on tension and competitive senses in knowledge sharing between partners.

Another critical value from statistical test highlights on training opportunities between management and operative staff (on statement A5). If not all staff are formally trained, it could reflect an issue of informal knowledge exchange. Other than training and orientations, formal learning and sharing knowledge are usually in meetings, conferences, and seminars (derived from the results of statement D2).

According to the results from interview 1, participated airlines have intra-organisational meetings frequently and regularly. As for inter-organisation, formal meetings are arranged around once or twice a year. The questionnaire outcomes provide further understanding that the three networks have different group meeting routines and frequency (from the results of statement D2). In addition, the frequency of internal cross departmental meetings to discuss alliance activities is partly affected by responsibilities and frequency of the group meeting.

Summary of the Analysis Theme of Learning Culture and Management Systems

From discussion on data under the theme of learning culture and management systems in this section, the discussed issues answer the research questions (how do alliance members learn? and how does the learning happen?) in terms of:

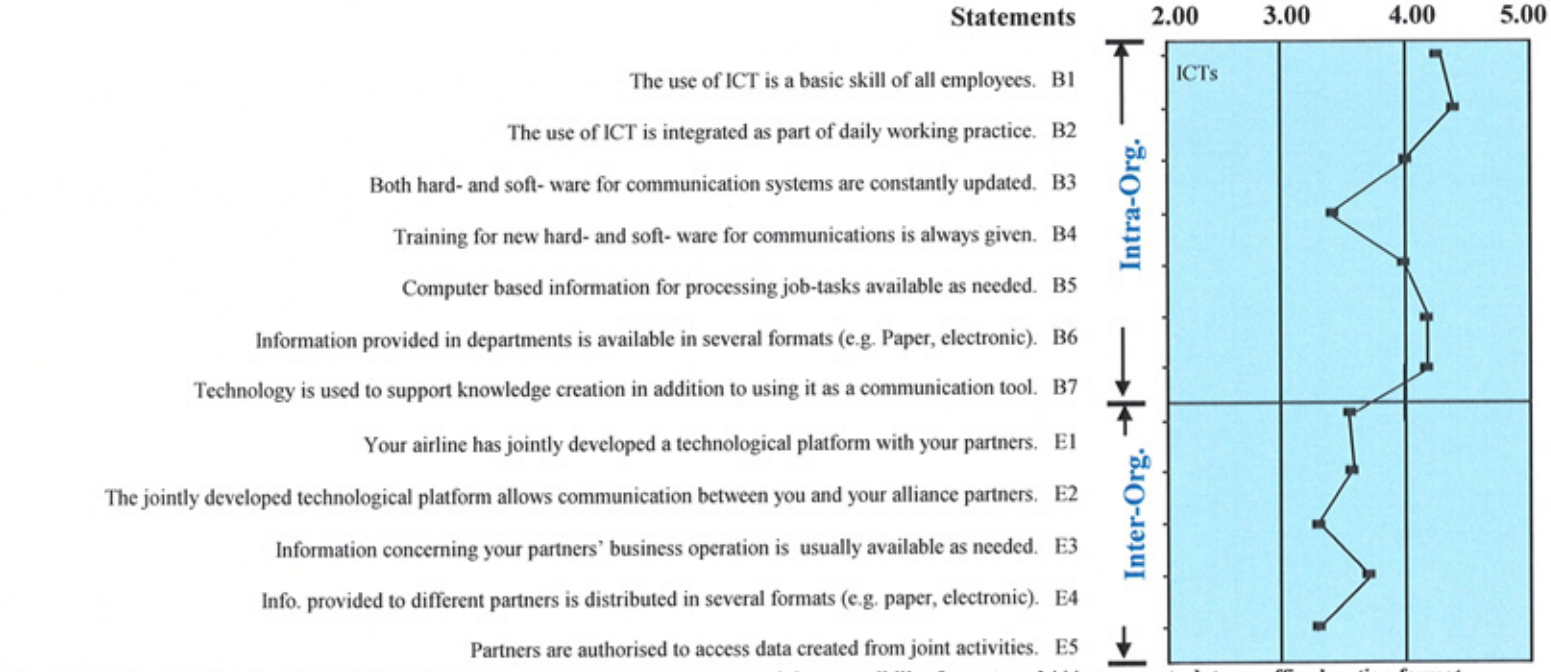
- The ways alliance members learn are conditioned by the characteristics of KM policies of alliance partners.
- The significance of Thai social relationship influences the ways they learn as well as on the ways learning happens.
- Leadership styles and empowerment are critical to the ways they learn as much as the ways learning happens in terms of reinforcement on individuals' learning.

5.3.2 Intra and Inter organisation' s ICTs Issues

Figure 5-3 concludes the results of statistical tests and graphs on descriptive values according to the three formats of data organisation. Figure 5-4 details descriptive values into seven groups of data based on the three formats of data organisation.

ICTs are technological media that can digitise and transform data, information, and knowledge in various forms such as text, picture, sound, code, etc. ICTs include technologies from the most familiar to our daily working life to more complex and complicated platform. The analysis under intra and inter-organisational ICTs issue according to the outcomes from statistical tests are presented below.

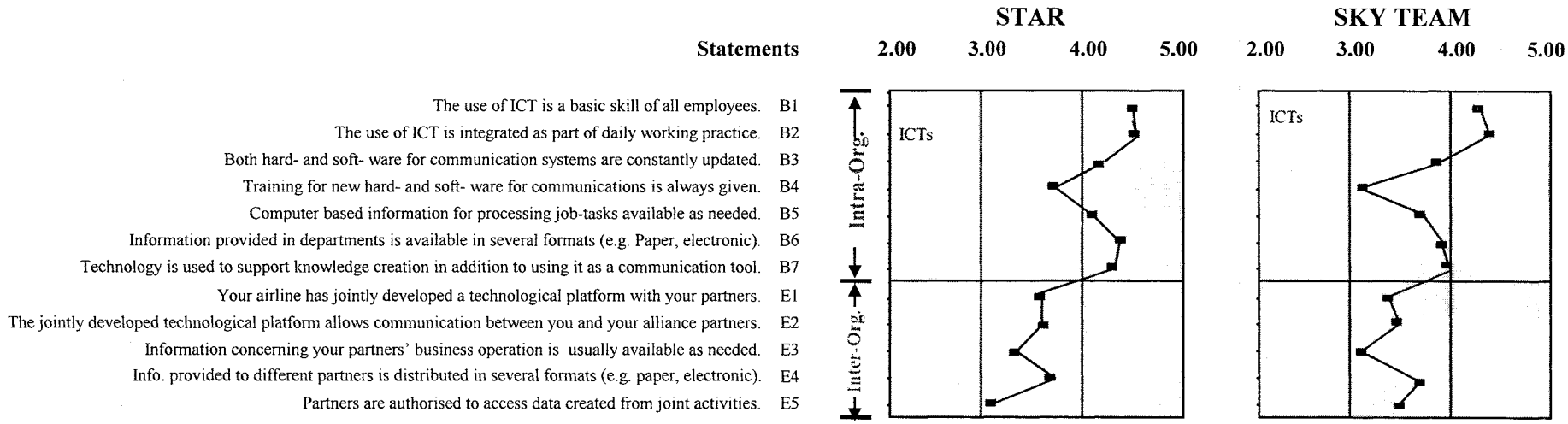
Figure 5-3: The Statistical Results Conclusion for Sections B and E

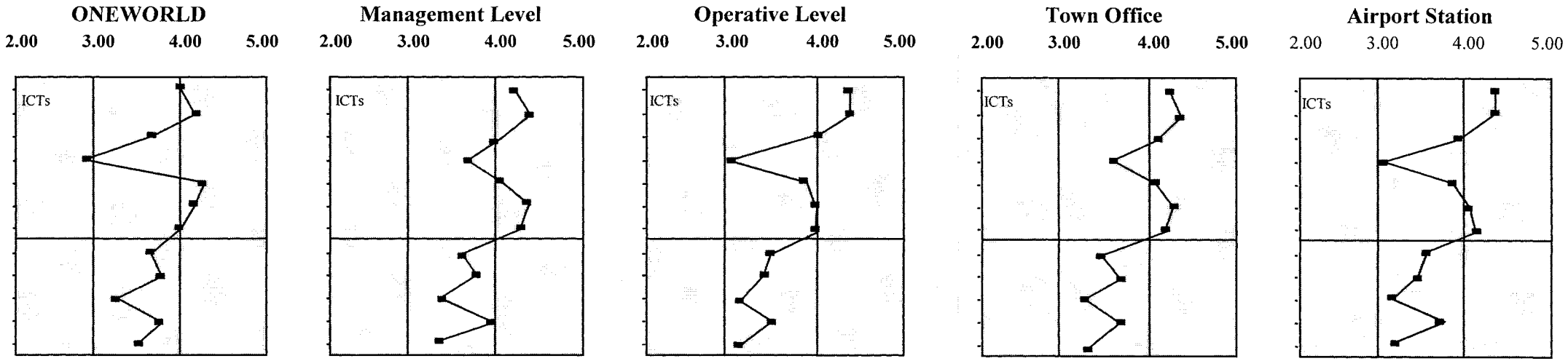


Set 1* (Kruskal-Wallis Test)	Set 2** (Mann-Whitney test)	Set 3*** (Mann-Whitney test)
S	X	X
X	X	X
X	X	X
X	S	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X
X	X	X

Notes: * represents data on alliance network format, ** represents data on managerial responsibility format, and * represents data on office location format**

Figure 5-4: The Conclusion of Descriptive Statistic for Sections B and E in 7 Groups of Data




ONEWORLD
2.00
3.00
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ICTs
Management Level
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ICTs
Operative Level
2.00
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ICTs
Town Office
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Airport Station
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ICTs

ICTs in Codification and Personalisation Strategies

From the survey, the use of ICTs is a basic skill of airline employees (from the result on statement B1) and the use of ICTs is integrated as a part of daily working practice (from the result on statement B2). Within airlines, both hard and software for communication systems are constantly updated (derived from the result on statement B3). Based on the significant result on the statement B4 between management and operative levels that is indicated in Figure 5-3, the descriptive values in Figure 5-4 provide the detail that the participants at management level agree significantly more with the provided training on communication technologies than the participants in operative level. In addition, the participants reveal that computer based information for processing job-tasks is available as needed (from the statement B5).

To specify roles of ICTs, day to day operation of the airlines' officers is also considered. Ultimately, the management of ICTs in organisations contain two main functions in supporting individuals, groups, the organisation, and the alliance network to improve quality of knowledge flows' reach and richness. The two functions are information and communication management facilitations (Maguire and Redman, 2007; Skyme, 2003; Somoliar, 2003; Marchand *et al*, 2000).

Information management facilitation involves functions in identifying, storing, organising, retrieving, processing, and supporting new knowledge creation. By these roles, ICTs facilitate learning and sharing knowledge in objects. As for ***communication management facilitation***, ICTs are employed in terms of interaction

facilitation. Therefore, this role has the function of conveying and linking communicators (knowledge encoder and decoder).

Referred to the agreement on technological utilisation in knowledge creation (statement B7), the technological utilisation is further focused based on characteristics of forms and sources of knowledge. In application to Nonaka and Takeuchi (1995) and Polanyi (1966) on forms of knowledge as tacit and explicit, if approaching the forms of knowledge by sources, tacit knowledge is knowledge in individual form while explicit knowledge is in objects. Then, under the concept of learning and sharing knowledge, information management facilitation role is utilised to facilitate learning and sharing explicit knowledge. On the other hand, a communication management facilitation role is exerted in facilitating learning and sharing tacit knowledge as well as distributing explicit knowledge. In spite of separating ICTs' functions into two main roles, in practice, both of them have connection roles and influence each other.

Jasimuddin *et al* (2005) determine over all knowledge management strategy from their research as codification and personalisation strategies. They focus on management on an objective side of knowledge as codification strategy and concentrating management on human networks as personalisation strategy. Regarding roles of ICTs, information management facilitation has the characteristic of codification strategy. As for communication management facilitation, its fundamental function is grounded on the same face as personalisation strategy which is to encourage communicators' interactions.

The results from the questionnaire suggest two out of three alliance network respondents have a high availability of computer based information for processing job-tasks in the right quality and at the right time (from statement E3). The issue is considered in terms of the reflection on the utilised strategies as "airline respondents' ICTs applications in the three networks are under the characteristics of codification and personalisation strategies". Nevertheless, the existence on unavailability of computer based information in the right quality and at the right time suggests the high possibility of the obstructions of airlines learning and sharing explicit knowledge. The issue of the obstructions in sharing explicit knowledge will be presented in the cases of knowledge hoarding behaviour below.

Knowledge Hoarding via ICTs Utilisation

The outcome confirms that reciprocal benefits and unity are expected to reduce intensive degree of competition as well as escalate willingness to share knowledge in alliances between airlines. Nevertheless, knowledge hoarding behaviour is commonplace particularly in the category of competitive collaboration (Stonehouse *et al*, 2000; Child and Faulkner, 1998; Vyas *et al*, 1995).

According to the survey, airlines in alliance networks have developed technological platforms to facilitate knowledge flows between partners (from statement E1 and E2). These platforms increase capability to energise information and communication flows with suppliers, distributors, and across airlines in the same network by standardising technological system and pattern of media.

In spite of the benefits of joint developed technological platforms and the authority to access data created from joint activities (statement E5), the central tendency of distribution on five-point agreement ranking and open-ended questions configures difficulties in acquiring partners' information (from statement E3 and the additional details in part 2 of the questionnaire).

In addition, critical value from statistical tests reveals that airlines provide information to partners in several formats which require capability in understanding according to characteristics of these formats (from statement E4). This could affect the organisation's knowledge sharing behaviour negatively. Practically, it could be considered as knowledge hoarding factor.

To be more specific, the participants confront knowledge hoarding between airlines in terms of confidential information, format of data storage, wrong and outdated information, regulations by anti-trust laws. (See the quotes below for the reveals regarding difficulties in knowledge flow circulations from the open-ended question in section two of the questionnaire)

> **Louis:** "*Alliance partners did not update the new information internally and lead to confusion among staff.*"

> **Lyncy:** "*I do find accessing and distribution of information among the allied group is sometimes very difficult which is due to different format of data storage. Several times, the IT dept. cannot really provide support in due time. Whenever it's passenger fares related issues or marketing issues or sales policy then it's not easy to conclude because each airline would also try to protect its' owne's interest.*"

> **Paul:** "*Wrong and different practices & procedures in each area branch cause problems. Passengers always got the wrong information from alliance partners.*"

For instance, Pemberton *et al* (2001), Stonehouse *et al* (2001), Barber (1998) include various formats of CRS reports in sources of sustained competitive advantage to CRS owning airlines during 1990. In the knowledge based view, various formats of CRS reports are CRS owning airlines' knowledge hoarding tools.

In contrast, this study extends the point above in that technological globalisation combined with joint technological platform, which enables airlines to standardise information that can simplify knowledge acquisition and distribution between partners, can energise information flow between partners in airline networks for a period of time upon the technological life cycle (new technology introduction-integration-ubiquitous-out dated). Besides, airlines always create a new way to control their information which formally and informally affects knowledge flow facilitation and inhibition some way some how.

Hence, the issue of knowledge hoarding leads to the understanding that the balance between competitive paradigm and joint benefits are intrinsic forces in utilising ICTs to create, change, and transform knowledge hoarding behaviours. Then, the source of sustained competitive advantage also includes ability to constantly initiate new knowledge from utilising ICTs.

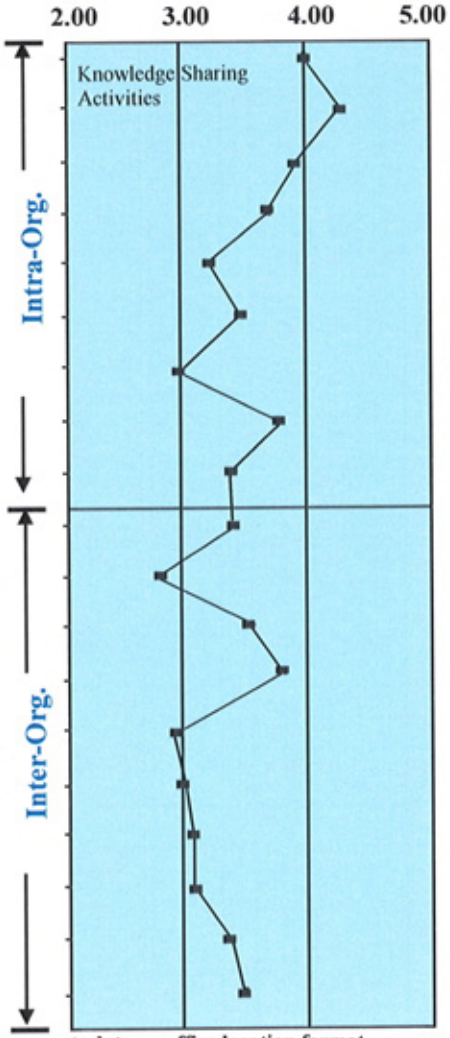
Summary of the Analysis Theme of ICTs Utilisation

From the discussed issues under the discussion on ICTs utilisation within and between organisations, the research questions (how do alliance members learn? and how does the learning happen?) are answered that alliance members learn by employing ICTs in creating knowledge and communicate with other knowledge encounters where the learning happens from the function of facilitation of ICTs in producing explicit knowledge and increasing reach and richness of knowledge flows. Besides, the evidence indicates the occurrences of ICTs utilisations in hoarding knowledge.

5.3.3 Knowledge Sharing Activities

The third theme of the data analysis, Phase 2, is focused on the issues of knowledge sharing activities within and between organisations. Figure 5-5 presents the statistical results on intra and inter-organisational knowledge sharing activities and descriptive values of the overall data. Figure 5-6 is engaged with the descriptive values under seven groups based on the three formats of the organised data.

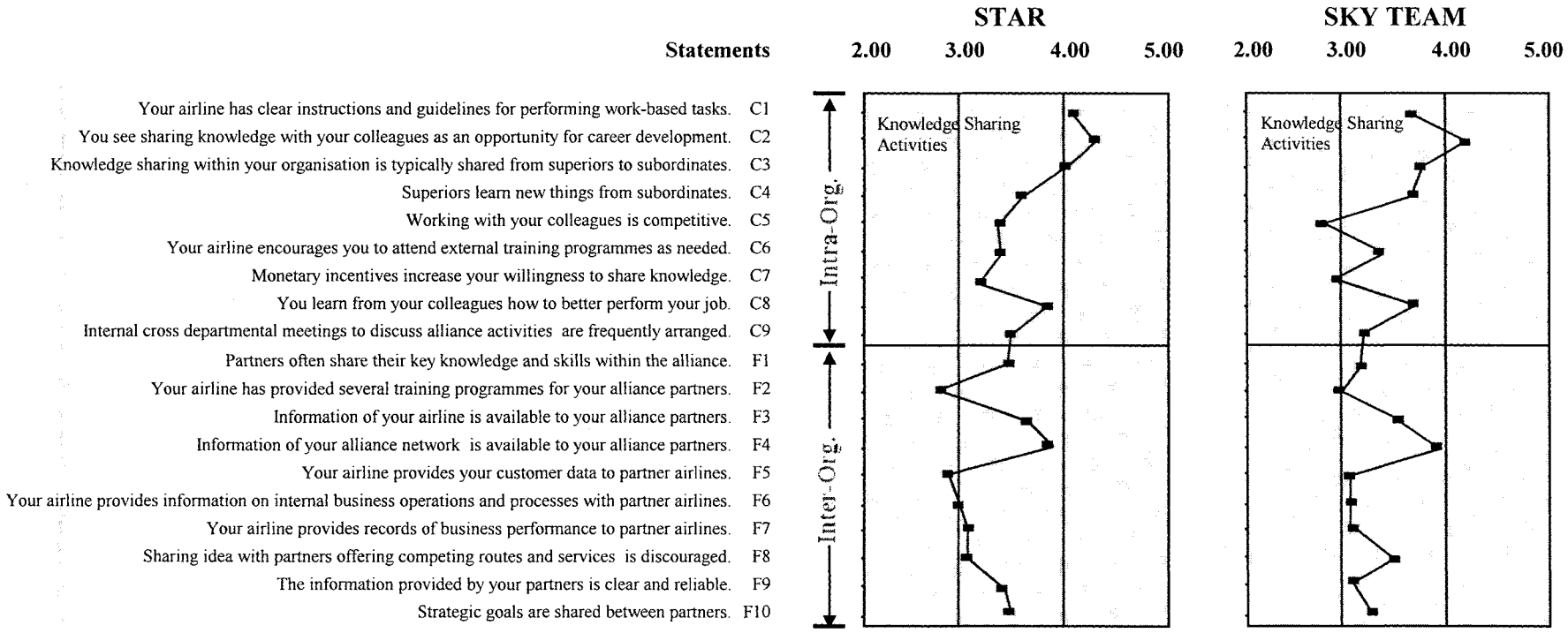
Figure 5-5: The Statistical Results Conclusion for Sections C and F

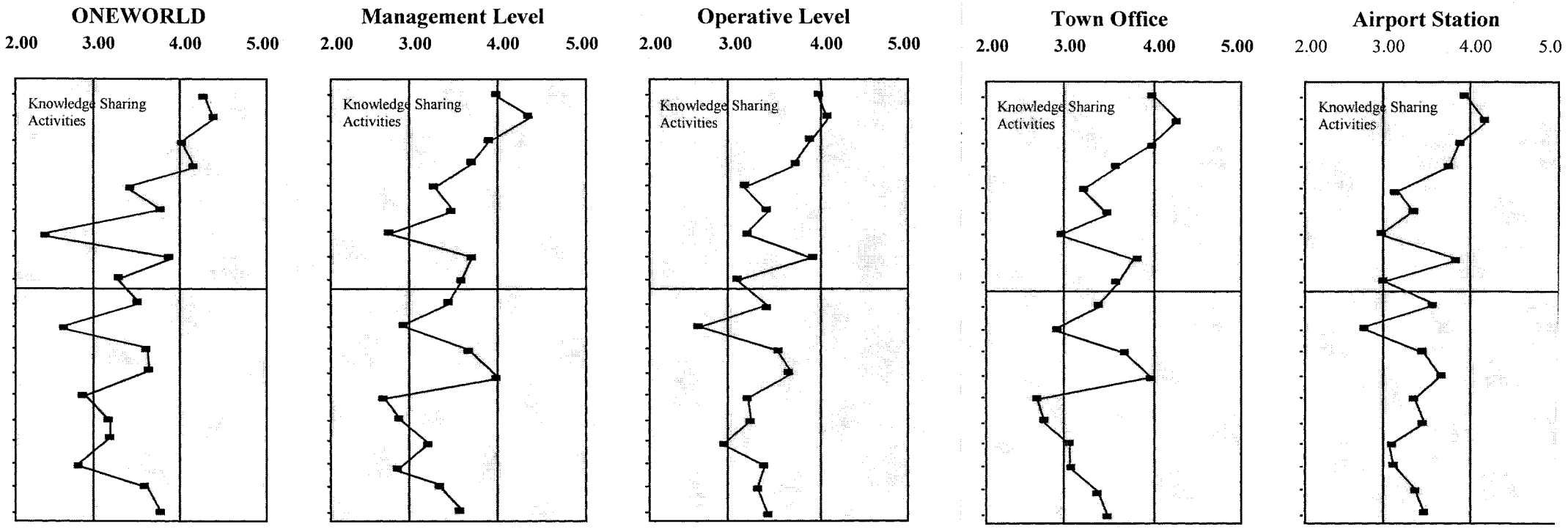


Statements	Set 1* (Kruskal-Wallis Test)	Set 2** (Mann-Whitney test)	Set 3*** (Mann-Whitney test)
Your airline has clear instructions and guidelines for performing work-based tasks. C1	X	X	X
You see sharing knowledge with your colleagues as an opportunity for career development. C2	X	X	X
Knowledge sharing within your organisation is typically shared from superiors to subordinates. C3	X	X	X
Superiors learn new things from subordinates. C4	X	X	X
Working with your colleagues is competitive. C5	X	X	X
Your airline encourages you to attend external training programmes as needed. C6	X	X	X
Monetary incentives increase your willingness to share knowledge. C7	X	X	X
You learn from your colleagues how to better perform your job. C8	X	X	X
Internal cross departmental meetings to discuss alliance activities are frequently arranged. C9	X	X	X
Partners often share their key knowledge and skills within the alliance. F1	X	X	X
Your airline has provided several training programmes for your alliance partners. F2	X	X	X
Information of your airline is available to your alliance partners. F3	X	X	X
Information of your alliance network is available to your alliance partners. F4	X	S	X
Your airline provides your customer data to partner airlines. F5	X	X	X
Your airline provides information on internal business operations and processes with partner airlines. F6	X	X	S
Your airline provides records of business performance to partner airlines. F7	X	X	X
Sharing idea with partners offering competing routes and services is discouraged. F8	X	X	X
The information provided by your partners is clear and reliable. F9	X	X	X
Strategic goals are shared between partners. F10	X	X	X

Notes: * represents data on alliance network format, ** represents data on managerial responsibility format, and * represents data on office location format**

Figure 5-6: The Conclusion of Descriptive Statistic for Sections C and F in 7 Groups of Data




ONEWORLD
2.00
3.00
4.00
5.00
Knowledge Sharing Activities
Management Level
2.00
3.00
4.00
5.00
Knowledge Sharing Activities
Operative Level
2.00
3.00
4.00
5.00
Knowledge Sharing Activities
Town Office
2.00
3.00
4.00
5.00
Knowledge Sharing Activities
Airport Station
2.00
3.00
4.00
5.0
Knowledge Sharing Activities

According to the survey's midpoint of agreement ranking distribution, airlines' intra-organisational learning is in supportive environment. They have clear instructions and guidelines for performing work-based tasks (statement C1). Although they agree that working with colleagues is competitive (statement C5), they see sharing knowledge as an opportunity for career development (statement C2).

Stonehouse *et al* (2000), Child and Faulker (1998), Doz and Hamel (1998), and Prahalad and Hamel (1990) suggest knowledge sharing is the process of capability contribution. In inter-organisational learning, the significant statistical result indicates partners often share their key knowledge and skill within alliance in accordance with the shared strategic goals (statement F1 and F10). Alliance's information is always available for airlines' staff in management level. It is implied that critical information within alliance network is initially shared to airlines at strategic level (F4). However, based on the statistical outcome in terms that knowledge is typically shared from superior to subordinates (statement C3) and superiors learn new things from subordinates (statement C4), the connection shows the distribution between knowledge flow of alliance network and partners' staff. Herein, the distribution of the knowledge flow embraces association and interaction between individuals in knowledge creation.

Individuals based Knowledge Sharing

In fact, the issues of individuals in knowledge sharing are vital in strategising knowledge management strategies. From the results of the survey, individuals are

involved in all knowledge flows both directly and indirectly (derived from statement C3, C4, C8, C9, and F8). Although other resources such as technologies are important for airline operations, as discussed in the previous section, the individual is the fundamental factor of new knowledge creation of airline operations (Kleymann, 2005; Hamilton and Morrish, 2002; Evans, 2001; Fan *et al*, 2001; Dougherty, 1999).

Learning and sharing knowledge are in the airlines' daily operational process when communication occurs (both self and interpersonal communications). Within a communicated flow, it could consist of data, information, and knowledge. Although data, information, and knowledge can be defined distinctively from each other (Nonaka and Teece, 2001; Davenport and Prusak, 2000; Dixon, 2000; Bhatt, 1998), if context in communication flow is considered as knowledge when an acknowledgment occurred by influencing decoder's mind (Stonehouse and Pemberton, 1999), the issue whether the context is data, information, or knowledge is mostly grounded on decoder's perception based on personal conditions such as ground knowledge, communication skill, and the objectives of that communication (Senge, 2006; Polanyi, 1966).

From the survey and the interviews in Phase 1, the transferred contents between airlines are primarily perceived as information. It is the learner who filters what information is knowledge. It is because the shared knowledge from the knowledge distributors might be already known or not importance to the focused job-task of the learner. Then, the transferred contents might not improve the learner performance and be ignored or collect by the learner.

The statistical results on the midpoint of distribution regarding the issue of the occurrence of sharing knowledge and skill between partners in the alliance network are under the two ranges of ranking of agree (4) and neither agree or disagree (3) (from statement F1). In relating to the argument in the previous paragraph, if the participants do not avoid provision of information, the case of neither agree or disagree provides the perception that they are not acknowledged by the provided information from the knowledge distributors. In this range of ranking (neither agree nor disagree), the results are of the respondents under the groups of data from Sky Team and staff in operative level.

Moreover, the descriptive values in Figure 5-6 also further indicate the issues of the kinds of shared information such as customer data (statement F5), internal business operation (statement F6), and records of business performance (statement F7). In the case of sharing customer data, the statistical results under the data groups of Star alliance, Oneworld, management level, and staff in town office are in the ranges between disagree (2) and neither agree or disagree (3). As for the shared information on internal business operation, the significant difference on the issue is occurred between participants in town and airport offices. Besides, the results under the groups of participants in management level and in town offices specify in the ranges of between disagree (2) and neither agree or disagree (3). According to the shared information on the records of business performance, only the results from the participants in operative level indicate the descriptive values under the ranges of between disagree (2) and neither agree or disagree (3).

Related to the perception that participants are not acknowledged by the provided information in accordance with the evidence above, if Bhatt (2001) defines the relationship between information and knowledge by focusing on interpretation it is also illustrated that knowledge formation is gyrated around individuals' mind, perception, and interpretation.

The clarity and reliability of the shared information between partners are elaborated in the statistical outcome (from statement F9). Practically, it is derived from the correspondence between ICTs system and the control as well as knowledge transfer capability of individuals (Maguire and Redman, 2007; Waring, 2004). Arguably, artificial intelligence and technological inventions can imitate the way individuals process stimuli (Divitini *et al*, 1993). However, available technological intelligence presently still has limited thinking capability and needs individuals to set and control them. Moreover, the individual is still the crucial resource in a large number of organisations that formally and informally adopt knowledge management in their operation.

Dougherty (1999) also perceives most knowledge in organisations to be people centered. Unique capabilities and roles of individuals on knowledge origin and creation are magnified by a number of researchers (such as Quinn *et al*, 1996; Huber, 1991; Polanyi, 1966). Therefore, although an individual's mental reality can be approached separately from physical reality, technology has crucial roles in facilitating the ways individuals perceive and interact with others and things. This can be seen in terms of the indication from statistical calculations on the issue of dynamics of knowledge sharing and knowledge hoarding (from the statement C5, F6,

F7, and F9), as it is the individual who has the mind that can collect content, rhythm, and other details in interacted events and produce perception based on experience as well as control responding.

Organisational Knowledge Creation

The statistical calculation on the criticality of staff training confirms an understanding that individuals' learning collectively renders organisational learning capability and new knowledge creation (derived from statement C6). Theoretically, many authors argue on the existence of organisational knowledge. Bhatt (2002) studied management strategies based on perceiving that individual knowledge is as important as organisational knowledge. However, in terms of learning, researchers (Senge, 2006; Dougherty,1999; Huber, 1991; Polanyi, 1966) who credit individual mind and thinking capability of individual view that individuals have learning capabilities, not organisations.

Agreeing on this notion does not insinuate inexistence of organisational knowledge nor organisational knowledge has no value. The point here is in terms of association as organisational knowledge created mainly by knowledge transformation into explicit forms and has originality from individual knowledge which is created by an internal process of the individual himself and interactions with other entities (Senge, 2006; Polanyi, 1974). Nevertheless, individual knowledge is organisational knowledge as long as the employment lasts. Therefore, human resource retention and

transformation of individual knowledge into more explicit forms are requisite to strengthening and developing organisational knowledge.

From the survey, in the cases where information is available to alliance partners and information of the alliance network is available to alliance partners (from statement F3 and F4), it is based on restrictions. The consequent issue can be exemplified from the limitations in transferring customer data (statement F5), information on business operations (statement F6), and the records of business performance (statement F7) as discussed in the former paragraphs. Hereby, based on the shared strategic goals, knowledge conversion processes between airlines in creating alliance knowledge are controlled on content of the knowledge to be transformed and the involved conversion processes.

Stover (2004), Smoliar (2003), and Herschel *et al* (2001) pinpoint the conversion of tacit to explicit knowledge as the process of organisational knowledge creation. Nanoka and Takeuchi (1995) stipulate this process as knowledge externalisation. Under the view of organisational knowledge creation, it is the way to formalise and make knowledge more recognisable.

Jasimuddin et al (2005) and Henson *et al* (1999) approach knowledge externalisation on the process of conversion (codification strategy) while Herschel *et al* (2001) studies this conversion process on instruments (knowledge exchange protocols). Practically, in creating organisational knowledge, both process and instruments are crucial to quality of the formalised knowledge.

Ultimately, the process of externalisation embraces the interaction between individuals and knowledge materials. As mentioned, that quality of explicit knowledge is dependent on process and instruments in the conversion process. Willingness to distribute knowledge and efficiency of knowledge materials also affects the quality of the transformed knowledge.

Referred to the statistical results on ICTs utilisation in the previous section, the presence of the codified knowledge within airlines is revealed in various formats such as paper and electronics. However, the midpoint distribution on the issue of providing records between organisations (according to statement F3, F4, F5, F6, and F7) and the issue of empowerment in the first section propose the understanding in terms that knowledge transfer is dependent on representatives' judgements under collaborative agreements. Hereby, in spite of the incurred view on power of ICTs usage in facilitating knowledge conversion and distribution, it is undeniable that individuals are the vital source who filter the formalised knowledge.

Summary of the Analysis Theme of Knowledge Sharing Activities

In conclusion, focusing on human roles in organisational knowledge creation as corresponding with the survey's outcomes regarding human centerisation in learning circulation, knowledge flow could be inhibited and the transformed knowledge could be deflected without willingness to share knowledge (Cook and Cook, 2005). Therefore, individual's willingness to share knowledge is the important dynamic in the way sharing knowledge happens in creating efficient organisational knowledge.

Therefore, the outcomes answer the research questions (how do alliance members learn? and how does the learning happen?) in terms of the ways individuals learn and make the learning happen, which included job-task roles, cognition, learner's ground knowledge and perception, association, and interaction processes.

5.4 Summary

From analysing data in Phase 2, the approached outcomes are on the three themes of AKM dynamics on learning culture and management system, AKM dynamics on ICTs utilisation, and AKM dynamics on knowledge sharing activities. The objectives of Phase 2 to answer the research questions in terms of "*how alliance members learn*" and "*how the learning happens*" are achieved by illustrating factors in AKM, their roles, and their relationships in airline's perspective.

Under the analysis theme of ***learning culture and management system***, the analysis on the statistical outputs provide the characteristics of KM policies of alliance partners, the significance of Thai social relationships in knowledge transfer, and the influences of leadership and empowerment. These outcomes indicate the ways alliance members learn and conditions of the ways learning happens from cultural and management aspects. In the issues of ***ICTs utilisation***, the statistical values derive the characteristics and indicators of ICTs utilisation in KM strategies and knowledge hoarding practices. Hence, the results provide the understanding on the ways alliance members learn by utilising ICTs and the related issues on the ways learning happens

by integrating ICTs in knowledge sharing activities. As for the investigation theme of ***knowledge sharing activities***, the results from quantitative calculation suggest the indicators of characteristics in knowledge sharing activities that are centralised on individuals' roles. Hereby, the outputs answer the research questions in terms of the ways individuals learn and make the learning happen.

From the perspective of airlines in knowledge sharing in Phase 2, further explanation on "how airline alliances learn" is required (Q2) and "how the learning in alliance happens" (Q3) which focus on alliance perspectives in order to conclude and connect the discussed issues as an alliance learning system. Therefore, the requirements for the investigation in Phase 3 are in terms of:

- How the identified characteristics of KM policies between partner airlines and the significance of Thai social relationships are perceived and correspond in alliance perspective? (Q3)
- What are the utilised leadership styles in airline alliance management? (Q2) How do the leaders manage knowledge sharing between airline representatives? (Q3)
- What are the characteristics of alliance knowledge flow structure? How is alliance knowledge flow circulated? (Q2)
- Have the practices of knowledge hoarding been realised in alliance networks' viewpoints and how do they occur? (Q2 and Q3)

The analysis outcomes in Phase 1 and 2 are utilised in designing interview questions in Phase 3.

Chapter 6

Data Analysis Phase 3: The Interviews with Airline Alliance Networks

> "*The inter-organisational learning dilemma stems from it being individually rational for an organisation to pursue the maximum organisational share of the joint learning by taking more knowledge than it gives.*"
>
> *Larsson et al (1998, p.288)*

6.1 Introduction

In Phase 3, the primary research is focused on alliance networks' perspective. The objective of this phase is to utilise the outcomes from Phase 1 (the characteristics of KM in airline industry) and the results from Phase 2 (the indications on AKM dynamics under alliance partners' perspective) in further investigation with executives of airline alliance networks in Thailand to answer the research questions "*how do airline alliances learn?*" and "*how does the learning in alliance networks happen?*".

The critical evidence from the interviews with airline alliances' executives is processed by organising via Nudist (qualitative analysis software) and arranging data in the section on *analysis introduction.* The discussion on the data in accordance with frameworks in designing the interview questions is discussed in the *data analysis*

section. The derived themes from the acquired data are those of critical alliance values, leadership, and alliance knowledge flow structures.

The outputs from the investigation in Phase 3 are concluded by answering to the research questions. From the designed research processes in which Phase 3 is developed from the results from Phases 1 and 2, the results from this phase are the main findings in the empirical investigation. However, the outcomes from the three phases of the investigation will be further discussed in Chapter 7.

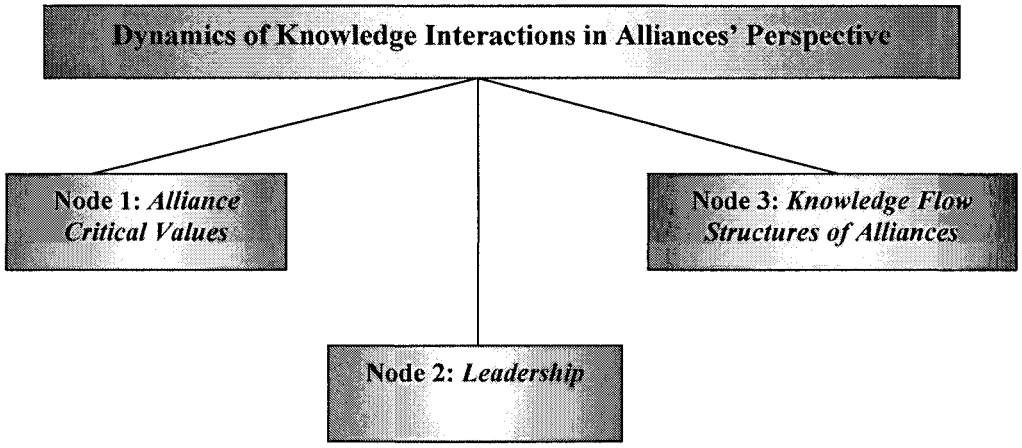
6.2 Analysis Introduction

The interviews in Phase 3 focus dynamics of AKM on alliance networks perspective to pursue the critical aspects of AKS. Phase 3 follows on from Phase 1's outcomes on the characteristics of KM in the airline industry (in terms of KM application levels, learning opportunities based on alliance motives, learning continuity from collaborative satisfaction, and knowledge sharing channels) which propose what alliance members can learn. Phase 3 is also based on Phase 2's results on dynamics of AKM from partners' perspective (dynamics in the issues of learning culture and management system, ICTs utilisation, and knowledge sharing activities between individuals) which identify the ways alliance members learn and the ways alliance learning happens.

The interviews were conducted in the native languages of the respondents: Thai and English. The interviews were transcribed from voice recorder. The Thai scripts were

translated into English before organising by Nudist. The data was organised into three main nodes of concepts according to the shared characteristics of the emerged contents from the interviews. These nodes are alliance critical values, leadership, and structure of knowledge flows. Figure 6-1 illustrates the three nodes of data in Phase 3 by Nudist. These concepts were employed with more specific scope in analytical approaches in the next section.

Figure 6-1: Three Nodes for Organising Text Data via Nudist in Phase 3



Similar to Phase 1, in terms of the analysis techniques, discourse analysis is utilised in this qualitative phase by identifying the shown and reflected evidences to interpret the

emerged issues with the theoretical frameworks. At this point, the dependence of the indicators in the interview contents based on the creation of collective meaning between contexts are engaged in recognising the issues from the raw data and grouped them into themes in Nudist. Thus, it was expected that the research questions could be answered and the main objective of this study could be achieved, i.e to identify dynamics of AKM (factors, their roles, and their relationships). Hereby, other than the analysis on each discourse, the related meanings between discourses under the focused collective meaning are considered in interpretation.

6.3 Data Analysis

As mentioned earlier, the principle of discourse analysis has an important role in identifying critical issues for discussion under the catrgorised data (organised by Nudist). At this point, the technique provides the relevance within nodes of data and between data and theories, and developing the critical findings to analytic frameworks regarding dynamics in AKM.

Dynamics of alliance knowledge interactions can be approached in terms of the complex cycles of effects and forces. This means forces of a case can be effects from other forces in other cases and vice versa. Nevertheless, analysing data in Phase 3 according to the objective of this phase and theoretical concepts in term of dynamics of KM in alliance networks are subjected to three major issues. They are the issues of alliance critical values, leadership, and structure of knowledge flows. (See Table 6-1 for the conclusion of the interviews with airline alliance networks).

Table 6-1: The Conclusion of Airline Alliance Interviews under the Interview 2 Themes

The Issues from the Interviews	Airline Alliance Networks		
	Vernon's Alliance Network	**Stephen's Alliance Network**	**William's Alliance Network**
1. Alliance Critical Values	-Functional cooperation -Priority in task achievement -Representatives' multi roles -Scope of cooperation	-Productive cooperation -Priority in task achievement -Representatives' multi roles -Scope of cooperation	-Friendly cooperation -Priority in task achievement -Representatives' multi roles -Scope of cooperation
2. Leadership Styles	-Democratic Style (working closely together)	-Laissez-faire style (delegation and control)	-Laissez-faire style (delegation and empowerment)
3. Structure of Knowledge Flow	-Decentralised	-Decentralised	-Decentralised

6.3.1 Alliance Critical Values

From the interviews with airline alliance executives, the explanations provide cultural attributes of their networks. The comment from ***Vernon*** reflects team-work culture in collaboration within his group that:

> *"They are usually representing their airlines on a project team, therefore they have collective responsibility for the outcome.".*

Stephen explains the characteristics in his alliance network in the interview that "*In the scope of XXX alliance, it is not clear. XXX alliance, surely, is an alliance. It is not like organisation. I mean it is not quite tangible, that's mean it has no XXX alliance's office. It has no employee who works for XXX alliance only. ... This is hard to define in term of organisational culture.*". Nevertheless his suggestions later can be approached with the aspects of collegial organisational culture which are indicated by Hofstede (1985) in terms of collaborative association that:

> "In *XXX alliance in the Thai market, we are very friendly, we talk like a friend, and we help where we can do. It has no formality.*"

On the case of alliance cultural characteristics, ***William*** adds the understanding on alliance culture by relating to definition of alliance which is the guideline of collaboration of his network.

> "*Our XXX alliance's management in terms of concept, links parts of the world to be one. ...It is distinctive by definition of alliance. It is the way of having joint obligation, allying to each other...*"

The conducts in management and cooperative processes that lead to superior performances are fundamentally relevant to culture and values in it (Huczynski and Buchanan, 2006; Hofstede, 1985). As culture is a factor in knowledge interaction, the inter force relation between culture and other collaborative environments in the airline industry (such as agreements, structure, regulations, and competition) create conditions for direction of alliance knowledge system. To identify terms to explain the attribute of inter-organisational culture, the definition of organisational culture by

the leading cultural scholars (Schein, 2004; Hofstede *et al*, 1990 as discussed in Chapter 2) are co-considered with the evidence from the interviews above.

Specifically, in inter-organisational context, alliance culture can be captured from the way affiliated organisations collaborate, which emerged from purposes of collaboration, characteristics of affiliated organisations, and the ways individuals perform (Schein, 2004; Lajara *et al*, 2003). Regarding the cultural concept as the shared practices in a society in conjunction with the attributes of alliances, the indications from the interview excerpts suggest inter-organisational culture can be perceived as a collective practice, phenomena, or joint factors that repeatedly occurred in operating collaborative affairs.

Analysing the interview data on the issues of values in alliance networks will be further discussed in the perspectives of *alliance relationship value* (based on the concepts of collectivism and individualism by Hofstede, 1985), *task achievement values* (based on the studies by Swierczek (1997) and Komin (1990) who focus this value on Thai environments), and competition in cooperation values in order to illustrate the forces and motives of critical alliance values on knowledge systems from the primary research evidence.

6.3.1.1 Alliance Relationship Values (Collectivism VS Individualism)

From the interviews, the participants mentioned the issues about relationships and practices that occurred in their alliance networks. By focusing on relationship in alliance networks, the data suggests interaction is relevant to knowledge practices within alliance networks. This can be approached by the concepts of collectivism and individualism (Kleymann and Seristo, 2004; William, 2003; Culpan, 2002; Hofstede, 1985).

Regarding the interview data, ***Vernon*** claims relationship values within his alliance network feature:

> *"...lot of cross learning between members of the group. To be successful in project management, individuals must work closely together on the project to achieve the desired outcome. ... the member carriers also must work together in certain areas to achieve a collective result. ...collective responsibility for the outcome."*

From the explained characteristics by ***Vernon*** in accordance with the concepts of social framework, this alliance network has primary concern on benefits of alliance network based on the view of collective project management for collective results (Hofstede, 1993 and 1985; Bond *et al*, 1982). That is, the network embraces collective relationship value by supporting members to work closely together on the assigned project management which espouses the group to achieve collective knowing status for collective success. Hereby, Vernon's alliance network grounds on systematic collectivism.

Stephen notes on characteristics of his collaborative network in Thailand which shape or relate to the issues of alliance relationship values:

> *"Alliance involves a high level of cooperation. ...it has no XXX alliance's office base. It has no employee who works for XXX alliance only. ... At my level, it is an inter-organisation support. In Thailand, XXX is the leader. It has more information and controls budget. When I arrange activities, airlines pay because the budget of the group is allocated through the airlines. ... I can tell you. We share information but not knowledge. Money comes to our pocket and why we should share the ways to get it. XXX has a tactic to continuously make profit for years in many markets while others lost. Why should we tell others how to do that!"*

From the disclosure above, it shows that partners in ***Stephen***'s alliance network have primary concern for the benefits of themselves. To discuss the collaborative characteristics in ***Stephen*** 's alliance network with the concepts of social framework by Triandis (1998), Markus and Kitayama (1991), and Diaz-Guerrero (1984), although working together to achieve the agreements is important, less formality of alliance organisation and the revelation in terms that they share information but not knowledge resists collectivism aspects in alliance relationship values. Hence, the collaboration within this group aims to create individual benefits based on group benefits (Williams, 2003; Hofstede, 1993). At this point, collaboration is perceived as a strategy to lever with a trend of group competition in the industry.

Regarding the issue of relationship in alliance, ***William*** asserts the domination of collectivism practices in collaborations although some notions of individualism are integrated to provide the freedom and identity in operation of each partner. He states

> "*We will see that all partners in collective management agree to a basic concept. We want this world to be one world. The world could be connected. ...For cooperation in Thailand, in fact, each airline has its own policy in order to run along mission and vision. However, in terms of linkage to increase success , it needs collaboration. ... we share information, we share roles. This airline might work on marketing. Another airline might work on advertising or finding partners, travel agents.*"

As for the alliance relationship values of ***William***'s alliance network, although alliance benefit is the primary concern, implementing alliance job task is on an individuals basis. Therefore, based on the concepts of social relationship values by Ali *et al* (2005), Williams (2003), Hofstede (1993), Hui (1988), and Wagner and Moch (1986), the network approaches collectivism by the concept of organising alliance activities as a unified organisation which creates a perception of knowledgeable departments in alliance organisation and local representatives of the group coordinate and circulate collective values from each knowledge department. Nonetheless, each partner employs their own policies rather than alliance policy in operating their collective operations.

In addition, from reviewing the studies on social framework in accordance with natures of collectivism in alliance collaboration and Thais (such as Sathaporn, 2006; Williams, 2003; Wagner and Moch, 1986), the results from the interviews above provide more complicated specific details than the conclusion from the argued natures from the various theorists by engaging with the concept of balancing competition and cooperation in collaboration.

Traditionally, based on the characteristics above, natures of competition drive the underlying concept of individualism in business operations of an organisation (Diaz-Guerrero, 1984). The principle of competitive alliance dilutes independent value by focusing on team-worked knowledge sharing style between collaborative competitors, which is the aspect of collectivism. However, the influence of competition limits collaboration between competitors to be in the form of strictly selective knowledge cooperation on collaborative activities. According to the elaborations from Vernon, Stephen, and Williams, their alliance networks have different degrees of collectivism. At this point, it could be another influence that shapes knowledge sharing characteristics of their group.

By approaching the concept of collaboration, albeit alliance networks ought to collectively cooperate on such a knowledge activity according to formal principles of collaboration, the incurred social practices could be the compromised forms between concept and actual practice. Hereby, notwithstanding the domination of collective relationship values in the investigated airline alliance networks, they embrace a range of individualistic practices and concerns in their collaboration.

6.3.1.2 Task Achievement Value

According to ***Vernon***, the indications regarding knowledge interactions are highlighted in terms of project achievement and friendly association. He shows the perception of friendly collaboration and targeting on alliance objective achievement values in that:

> *"They generally do work very well together through various forums such as country steering committees and marketing committees with representatives of each airline serving Bangkok on them. ... the style is very collegial... The agreements we have are the guideline of working as a team in xxx Alliance. Members have efficiently accomplished the projects."*

The expressions from ***Stephen*** and ***William*** reaffirm the presence of task achievement value and friendliness with respect to cooperation as:

> **Stephen:** *"...we could not miss the agreement. ... In my level, it is an inter-organisation supporting. ...in my opinion, xxx alliance in Thai market, we are very friendly, we talk like a friend, and we help what we can do. It has no formal form."*

> **William:** *"...to achieve these XXX objectives, we need to cooperate. ...We are friends. ... I delegate and each airline has authority and responsibility. It is cooperation with respect to each other, potentially because each airline has different strengths."*

From the data presented, the outcomes address the different findings on value of task achievement from the studies by Komin (1990) and Swierczek (1997) who indicate the lesser importance of task achievement values in Thai organisations. The data from the primary research in Phase 3 suggests project achievement based on friendly association is the major concern of their sharing knowledge principles and practices. Hereby, the derived issue is perceived as a critical value in all alliance networks.

6.3.1.3 The Value of Competition in Cooperation

In collaborative networks, efficient knowledge process requires effective alliance knowledge management, devotion, opened knowledge systems between partners, and corresponding employees (from partner airlines and alliance networks). According to the fact of competitive alliances, the players in collaborative networks contain some degree of cooperation in the regard of collaborative context and competition in the regard of competitive paradigm. This notion reaffirms the expression of competition in cooperation within airline alliance by the excerpt from the interview below:

> **Stephen:** "*XXX has a tactic to continuously make profit for years in many markets while others lost. Why should we tell others how to do that!*"

Based on the effect from gaps of relationship in cooperative activities within collaborations, airlines in alliance networks still have a sense of competition in their business operation. Moreover, organisations in the same industry compete with each other because they share the same group of customers or have overlap business benefits (Porter, 1998). Hamel (1991), Hamel *et al* (1989), and Contractor and Lorange (1988) suggest the benefits of collaboration with competitors. Within horizontal collaboration, organisations in an alliance network have similar business operations (De-Wit and Meyer, 1994). They are in the same network but in fact, they are not the same company although, in practice, under collaborative obligation, some networks act as single organisations on assigned projects according to their agreements (Child *et al*, 2005; Escriba-Esteve and Urra-Urbieta, 2002; Khanna, 1998).

In addition, to consider learning opportunities from partners with the method of collaborative activities implemented in **William**'s network, each partner is assigned the whole process of a job-task such as advertising, marketing, etc. He reveals

> *"This airline might work on marketing. Another airline might work on advertising or finding partners, travel agents."*

From this method of distributing the alliance projects in William's network, the collective results are from individual partners' achievements on alliance assigned projects. Thus, it does not support partners to learn from partners' tactics. Das and Kumar (2007) focus on the concept of learning opportunities in alliances (learn about, learn from, and learn with). From the empirical evidence, some learning opportunities presented in the literature occur in airline alliance collaborative activities.

Knowledge management in the aspect of partner airlines' sub knowledge systems and knowledge systems towards particular alliance activity could expand competitive attitude which could lead to knowledge hoarding behaviour within the group.

Furthermore, regarding the benefits of utilising the interim leader (not from alliance partners' organisations) in alliance networks as indicated by Werther (1998), the participants in Phase 3 (**Stephen** and **William**) claim that there are no local interim leader in their network (leader who work for alliance networks but not for airline partners) particularly, in Thailand. However, William's network engages with interim representatives (from GSA; general sales agent). One of the participants (**Vernon**) indicates the involvement of interim leader in his network.

> **Stephen:** "*It has no employee who works for XXX only. We are all airlines' employees. ... It is an additional job as a complementary.*"

> **Vernon:** "*Executives on the management board are CEOs of airline members and CEO of XXX. Airlines' CEOs distribute alliance projects to their subordinates. CEO of XXX implements the project by working together with XXX's subordinates at the head office and in six regions (in that most are about marketing) who work closely with airlines' representatives within their responsible regions.*"

> **William:** "*XXX is leader of XXX alliance in Asia. ... XXX, XXX, XXX are branches. It has some GSA. When we cooperate, although some of them are GSA, they adopt role of those airlines.*"

From the descriptions above, the roles of alliance activities' encounters are important to knowledge behaviours and interactions in alliance knowledge systems. Role in organisation carries aspects of duties, obligation, authority, responsibility, and rights which are associated with status as well as position of the individuals within an organisation (Solomon *et al*, 1985; Goffman, 1967). In term of role function, it is always expected by social members and expressed in individual's behaviours. Although on one hand, roles within an organisation are guided by a position-based role script, on the other hand, Goffman (1967) argues that role attributes are guided by imagination-based role script according to social interaction.

To discuss the evidence from the interview above, role of a member in an organisation guides the span of aspects of their representatives' roles in collaborative activities. Airlines' representatives who work according to their functions in their airlines also have to work for the alliance network which their airlines affiliate to. At

this point, the role-set of airline representatives is likely to contain two main role scripts in their operation as network members and their organisation representatives.

Other than the issue of the embraced roles, Cabri *et al* (2004) and Fournier et al (2003) encompass the concept of priority of role as assumption chain to choose role ordered by the priority levels. Nonetheless, the evidence from the interviews also suggests informal frame to balance choices of operational role priority based on authority of local alliance leader in controlling knowledge circulation within the network as exemplified by the case of **William**. He mentions

> **William:** "*I think alliance agreement has criteria. One of the points that we all told before we have our agreement is that we do not interrupt work of airline partners as long as they contribute to XXX alliance.*"

Vernon provides the affirmation on the choices of role priority of partners in his alliance network which he experiences as the difficulty in getting information from partners:

> **Vernon:** "*Sometimes, depending on their priorities in their own markets.*"

Practically, based on the explanations from the interview participants above, the role priority between airlines and alliance duties are critical to relationship as much as the achievement from collaborative activities. Devotion from airline representatives to

collaborative knowledge community is also derived from moral and practical based decisions on the balance of job-task priority (Santrock, 1997). As long as the two operative role scripts of the representative based on job responsibilities to airlines and collaborative network are not in conflict in terms of time pressure and content, it has no problem and scripts in role-set can be usually performed.

However, devotion to the group based on job-task priority on airline operative duty is an issue that will force individuals to rank priority of roles. In addition, in accordance with operative roles, knowledge encounters commit with knowledge activities to serve themselves one way or another.

6.3.2 Leadership Styles

The employed leadership styles in airline alliance networks are directly related to the ways airline alliances learn and the ways the learning happens. Ultimately, leadership is an attribute of leader to motivate, associate, and lead people in command to achieve objectives. From the interviews which illustrate the case of leadership in airline alliances in Thailand, two groups have assigned airline representatives (from local airlines' executives) while another group has network representatives (from alliance head office) who support and coordinate airline partners. Hereby, role of airline alliance leaders is in terms of coordinator. This is concluded from the role description of the interview participants such as **Vernon**, who indicates "*My responsibility is coordinating with XXX Alliance in Asia Pacific.*" and **Stephen** conveys that "*In* my *level, it is an inter-organisation support.*"

In the case of leadership styles, the interview participants describe their styles in their alliance networks as cooperative and collegial. However, their styles have some different characteristics in the ways they view efficient cooperation and scope of collegial style. Their descriptions on leadership styles are presented below:

> **Vernon:** "*My working style is co operative, but firm. ... In XXX Alliance the style is very collegial with the airlines making collective strategic and policy decisions based on recommendations worked out by the organisations and a management board that reports ultimately to the Chief Executive Board.*"

> **Stephen:** "*A core airline is delegated roles according to a regional base. ...I focus on output... Cooperation is very important. Relationship between employees is another issue that we are concerned about. ... I call them for LCC meetings. After the LCC meeting I call my subordinate in XXX, whom I have a meeting every week. I distribute information at that time. If he is unclear about anything, he can ask at that time. This would create the least problems.*"

> **Williams:** "*I delegate and empower colleagues. I empower them to have full authority to make a decision. They, have full responsibility to create and initiate. The end result is that I give them 40 percent. I give 60 percent for delegation. If the end result is not good but good performance has been shown according the delegation, that's fine. If both are good, of course that's a success. But if both are not good, and staff do not operate according to the delegation, they are not responsible in terms of the empowerment issue, that's unacceptable.*"

According to Lewin *et al* (1939)'s three leadership styles (autocratic, democratic, and laissez-faire styles), these are utilised in approaching the descriptions from the alliance leaders above. Based on style of **Vernon**, he allows followers to participate in operating as well as decision making process. Conceptually, this style has high social interaction between leader and followers and also between followers. These

characteristics respond to democratic style. Stephen and William centre on delegation and empowerment which are the underlined aspect of Laissez-faire style. As for **Stephen**, he focuses on output while methods on operations are choices and the responsibility of followers. According to **William**, he also adds that "*It's about delegation and empowerment. It is the same that I do with colleagues here. In XXX alliance, I delegate and each airline has authority and responsibility. It is cooperation with respectation in each other potential because each airline has different strength.*". At this point, based on William's leadership, followers are trusted and allowed to organise, operate, and make decision on their responsible jobs.

The primary data shows that only democratic and laissez-faire are utilised. The reasons behind the presence of the two styles is based on influences of management value of collaboration in the airline industry (equality) (Oum *et al*, 2000), no formal appraisal system for airlines' representatives in network collaborations (Kleymann and Seristo, 2004), and values of Thai people (respectfulness and consideration) (Komin, 1990). In spite of the positions of alliance leaders and Thai characteristics, the knowledge values of airline representatives and their cooperative styles in the group also challenge the utilised leadership styles in the alliance network. Therefore, the further discussion will be with the issue of leadership styles and followers' knowledge sharing values.

On the one hand, leadership and management styles can directly affect knowledge sharing behaviour. On the other hand, other than leader's personality and the characteristics of the job-task involved, subordinates' traits also influence on the methods leaders manage knowledge interaction, set the operation, and value other

governance issues as mentioned in the beginning of this section (Savery, 1994). Concurrently, to consider the interviews' outputs in identifying formats of knowledge interactions, subordinate's learning values are co-considered.

Cook and Cook (2005) distinguish knowledge sharing value into intrinsic and extrinsic types. ***Intrinsic knowledge sharing*** is knowledge transfer for the sake of knowledge activities whereas ***extrinsic knowledge sharing*** is knowledge transfer based on the influences of incentives. Therefore, the extrinsic knowledge sharing value is required operant conditioning policy (such as reinforcement) from the leaders (Mckenna, 2006; Nonaka *et al*, 2000; Noypayak and Speece, 1998).

At this point, in relation to the characteristics of leadership, subordinate value systems, and the exemplified primary data in the beginning of this section, **Vernon** has a democratic management style by means of working closely together to achieve collective results. With intrinsic knowledge encounters, knowledge interactions tend to be functional symmetry as each party has willingness to share knowledge for role-oriented in sharing knowledge. In the case of extrinsic knowledge encounters, the leader has the opportunity to inspect and motivate them in sharing knowledge activities on the socialisation scenes (Lendrum, 2000).

The leadership styles of **Stephen** and **William** as presented in the beginning of the section contain characteristics of laissez-faire style based on preference for delegating and value empowerment. According to the characteristics of leaders in job distribution and follow up towards intrinsic knowledge exchangers (Thomas *et al.*, 2001; Lewin *et al*, 1939), the interaction between laissez-faire style leaders and

intrinsic knowledge interactors is in terms that knowledge interactions have more chance to flow smoothly based on the clear set of roles between alliance coordinator and members to benefit knowledge sharing.

However, in the case of lack of formal control systems in alliance cooperation, if network members ground their knowledge activity on incentives and they have authority to make a decision and set job-task detail by themselves, knowledge interactions in alliances have high opportunity to be less of a priority particularly in the situation whereby alliance knowledge encounters have to responsible for their airlines routine job-task.

By realising the formats of knowledge interactions with alliance members, it is also important for leaders to manage collaborative relationships which can be justified from the way and degree that leaders adjust their styles and handle possible conflicts according to the situations and circumstances (Noypayak and Speece, 1998; Savery, 1994).

From the interviews, the basic duties of airline alliance leaders are alliance projects distribution, communication, support, coordination, and making decision. Nevertheless, the participants also indicate the issue of monitoring on relationships between representatives within alliance networks. They mention:

> **Vernon:** "*...they generally do work very well together through various forums... Excellent... Co operations in the group are satisfied.*"

> **Stephen:** "*Relation between employees in organisation is crucial. Organisation can be run towards objectives more easily if employees retain good relationships. Cooperation is very important. Relations between employees is another issue that we are concerned about.*"

> **William:** "*The relationship of airlines in XXX alliance is very good. We meet. We talk. This afternoon I will have a meeting with them. We are friends.*"

Leaders in alliance networks are integrated with managing conflict in order to facilitate and encourage knowledge flow circulation (Kleymann and Seristo, 2004; Skyrme, 2003; Lendrum, 2000; Nurmi, 1996). Swierczek (1997) approaches two management styles that are suitable with conflict management in collaborative networks in Asia: compromise and collaborative styles. ***Compromise style*** concerns principle of a fair combination of gains and losses for all parties. On the other hand, ***collaborative style*** focuses on solving at the causes of conflict.

The results from the interviews indicate that the leaders of airline alliance networks in Thailand frequently employed anti aggressive management behaviours to effectively coordinate and contain reciprocal satisfaction in their networks as the exemplification on the interview quote below. At this point, in criticising their practices with Swierczek (1997), the interview participants exert both compromise and collaborative (integrating) styles. See the elaboration from William for attitude of local alliance leader on handling conflicts and difficulties in collaboration.

> **William:** "*It is normal to have difficulties. For instance, from unclear communication, as a centre, it is our duty to make language and communication flow clear. But misunderstanding could happen. However, the most important thing is when it*

happens, how could we solve it, how could we improve it?. It is our duty to make clear what they can do and what they can not and follow up assigned jobs. Problems could happen from unclear communication such as when a senior could not come for a meeting and send representative instead. We solve this problem by follow up, for example calling senior and explain what is going on. It could help to reduce weakness of communication."

Theoritically, collaborative style seems to be more straightforward in solving problems than the compromise style. Based on the characteristics from the interviews, leaders of airline alliances employ compromise style in order to remain a good relation in the group. Furthermore, they also concern on respectfulness as well as friendship between all parties (Komin, 1999; 1990; 1978). Nevertheless, utilising the two styles according to suitable situations can reduce knowledge sharing resistance in alliance socialisation process (Nurmi, 1996).

6.3.3 Structures of Alliance Knowledge Flows

According to the objectives of the interviews in Phase 3 in which are to identify "how airline alliances learn" and "how the learning in alliance networks happens", the derived issues that are presented in this section are about structures of alliance knowledge flows. In terms of the discussed contents in the presentation, they are under the cases of airline alliance structures in Thailand and knowledge flows under alliance control system.

6.3.3.1 Airline Alliance Structures in Thailand

From the interview data, airline alliances have partial similar management structures. They are flat and have a small amount of people (representatives of on-lined airlines and GSAs (general sale agents) of off-lined airlines in Thailand). The characteristics of alliance knowledge flow structure are derived from the interviews. In addition, based on the cooperative nature of collaboration, management in alliance network is in the form of peers in cooperation rather than hierarchical relation of command. See the disclosure from Stephen below:

> **Stephen:** "*Our management system is like – at the head office – we have a representative that looks after XXX alliance and we separate management to regional level- Head office communicates through these people in each region. For instance, representatives of Asia Pacific will coordinate with stations in which each has ambassadors who are information, data, and updates distributors of each airline. They distribute information to employees in various levels. In Thailand, we have 2 ambassadors – town office and airport ambassador.*"

In addition, William specifies the uncomplicated forms of local management structures. Although alliance knowledge assimilation is subjected to association in collective competence of airline members in a distributed job task, the requirement on flexibility in cross disciplines of knowledge sharing is crucial. He imparts that:

> **William:** "*XXX alliance in Thailand has formal meetings 4 times a year. It's easy. It does not complicate at all. ... At XXX, it is a head office, but it hardly closely cooperate mission to each country. Head office control deals with concept, as for operating role, each country can operate by itself. Of course, we need approve budget and direction from head office, but about management, I could say around 90 percent of jobs we set and manage by ourselves.*"

Table 6-2: Mintzberg (1983)'s Five Basic Elements of Organisation and Airline Alliances in Thailand

Mintzberg's Five Basic Elements of Organisation in Alliance Context	Airline Alliance Networks		
	Vernon's Network	**Stephen's Network**	**William's Network**
1. Strategic Apex	Representative from the network head office	Local executive of airline member	Local executive of airline member
2. Technostructure	Global and local	Local	Regional
3. Middle line	Airline representatives	Airline representatives	Airline representatives
4. Operative core	Staff of member airlines	Staff of member airlines	Airline representatives and staff of member airlines
5. Support staff	Staff of member airlines	Staff of member airlines	Staff of member airlines

By applying Mintzberg (1983)'s five basic elements of organisation structure to alliance context, the configuration based on the primary research data is presented in Table 6-2. Among the three networks, ***strategic apex*** which delivers command and link knowledge flows between head office and local network in Thailand reflexes their structure system. In the case of ***technostructure***, it presents structure of communication and knowledge flows. ***Middle line***, ***Operative core***, and ***support staff*** elements detail on related knowledge encounters in local alliance knowledge systems.

Mintzberg *et al* (2003), Gould (1999), and Scott and Hogg (1996) enunciate power and strategic control in collaborative teams can move along the flexible disciplines. That is, cooperative requirements (such as span of commands) are not static and rotated according to the key assigned job task. Moreover, knowledge systems within the groups are associated with control from the head offices and local management settings.

Regarding the characteristics across the five basic elements, airline alliance networks in Thailand have flexible cross-discipline structure for specific projects (Scott and Hogg, 1996). Nevertheless, the distribution of the assigned job-tasks is subjected to capability of each partner. These aspects are reflected from organisational structure of alliance network and characteristics of job task distribution based on the available skills of partners revealed by the interview participants.

> **Vernon:** "*XXX has a decentralised structure. Executives on the management board are CEOs of airline members and CEO of XXX alliance. Airlines CEOs distribute alliance projects to their subordinates. The CEO of XXX alliance implements the project by working together with XXX alliance's subordinates at the head office and in six regions (in that most are about marketing) who work closely with airlines' representatives within their responsible regions.*"

> **Stephen:** "*As for formal activity, we have meetings around 4 times per year. The process is like this – after the LCC meeting we get a conclusion for alliance assigned activities, XXX has an internal weekly meeting – again, we get conclusions, if relevant and necessary – we arrange a seminar for travel agencies to support them to operate marketing activities and practice according to XXX's and alliance's objectives. ... We look at the output. Employees are trained to work multifunctionally.*"

> **William:** *"...we share information, we share roles. This airline might work on marketing. Another airline might work on advertising or finding partners, travel agents."*

To examine the interviews with the argued concept by Mintzberg (1983) under knowledge management issues, circulation of knowledge flow in **Vernon**'s alliance network is structural and clear. Knowledge transfer is critically based on assigned projects between each member and group coordinator. Flows of knowledge within the group are shared by members, screened by coordinator, and reported to all members and the head office.

As for the knowledge system in **Stephen**'s alliance network, airline representatives, which are called the ambassador within the group, have less structural knowledge flow than Vernon's and William's groups. Knowledge sharing between ambassadors is encouraged but usually happens in formal associations. At this point, processing knowledge is an individual job-task and knowledge flows within the group are the outcomes of the processed knowledge.

In the case of **William**'s alliance network, the knowledge flow seems to be more complex than Vernon's group according to the consistence of structural and personal knowledge flows. At this point, roles of airline representatives are empowered and cross structure knowledge flows are encouraged. Basically, collective knowledge sharing is in all stages of assigned activities.

6.3.3.2 Knowledge Flows under Alliance Control Systems

With reference to a rotating span of command and flexible task responsibility as mentioned in the former section, the local leader of a group contains the general cooperative authority. Regarding the issues of authority on management and decision making in international corporate, control of organisations generally is in two patterns; centralised and decentralised systems (Bloisi *et al*, 2003). In many organisations, both centralised and decentralised systems are utilised according to the suitability on certain management schemes.

From the interviews, all local leaders of the participated alliance networks view the control system within their groups as decentralisation. ***Decentralisation*** is a bottom up management system which concentrates on authority dispersion to lower management and operative levels in local branches (Bloisi et al, 2003; Gould, 1999). This pattern dominates sense of localised management system. The adaptation of this kind of control system is based on geographic force. Two of three participated airlines centre their regional alliance management in Thailand. The explanations from the respondents detail the characteristics of the control structure of their groups below.

> **Vernon:** "*XXX Alliance has a decentralised structure. Executives on the management board are CEOs of airline members and CEO of XXX. Airlines' CEOs distribute alliance projects to their subordinates. CEO of XXX implements the project by working together with XXX's subordinates at the head office and in six regions (in that most are about marketing) who work closely with airlines' representatives within their responsible regions.*"

> **William:** "*At XXX, there is a head office but it hardly closely cooperate mission to each country. Head office controls regarding concept, but as for operational role, each country can operate by itself.*"

In terms of hierarchy of control, organisational structure can be in form of flat or high structure (Blois *et al*, 2003; Scott and Hogg, 1996). However, management structures of competitive alliance networks tend to be flat due to selected specific joint obligations and small number of individuals involved as mentioned before.

On that account, in the perspective of airline alliance networks in Thailand, the group presented by Vernon has dominant characteristics of a decentralised management structure due to the assigned corporate director from the head office to monitor, support, control, and decide on the delegated projects. William's group has a more clear decentralised structure than the group of Stephen. In Stephen's group, local leaders delegate job tasks to members in accordance with guidelines from the head office. For William's alliance network, the local unit receives a budget of annual projects which local members in the group set up via their own management system.

6.4 Summary

For Phase 3, the key outcomes added to the understanding of dynamics of knowledge sharing by answering the research questions from the investigation in the perspective

of alliance networks. The issues from Phase 3 are alliance critical values towards learning, alliance leadership, and structures of alliance knowledge flows.

Regarding the answers to the research questions (Q2 and Q3) of this research project from this Phase, the contents of the identified issues are about:

- The practices that airline alliances integrate in learning under the confinement of the critical values.
- The ways the learning happens by the influences of alliance critical values.
- The methods of learning relate to the utilised alliance leadership styles.
- The characteristics that leadership styles affect learning within alliance networks.
- The learning patterns are forced by the knowledge flow structure.
- The ways that knowledge structures facilitate and inhibit alliance learning.

In terms of research objective accomplishment, these increase the understanding on factors and conditions that support alliance knowledge sharing in more specific points of views from the empirical investigated cases of airline alliances. In addition, the outcomes from the considered issues propose that alliances should embrace appropriated alliance values (good relationship, aiming for task achievement, and the balance between co-operation and competition), efficient alliance leadership, and knowledge flow facilitated structure.

The issues arisen from investigating dynamics of AKM create conditions and initiate directions to further synthesise the components of alliance knowledge system in

which affect on competitive synergies. Frameworks development based on the issues discussed in this and the previous two chapters will be presented in Chapter 7.

Chapter 7

Discussion

> "*...factors affecting knowledge transfer have varied effects on different types of alliances. Awareness of the existence of these factors ...helps practitioners analyse more attentively available options for decision-making and their consequences*"
>
> *Khamseh and Jolly (2008, p.37)*

7.1 Introduction

The results from the empirical investigation illustrate features of AKM dynamics. From the analysis, they highlight alliance critical values, leadership, and knowledge flow structure as the main findings from the investigation into Thai airline alliance knowledge sharing. According to the findings on "what can alliance members learn?", "how do they learn?" and "how does the learning happen?", these features increase the understanding concerning factors in AKM and their roles.

Other than the understanding on dynamics of AKM in terms of their existence and their roles, the researcher needs to further identify the relationships between the dynamics to achieve the overall objective of this study. Hence, in Chapter 7, the findings from Chapter 4, 5, and 6 are synthesised to explore the relationships between the dynamics and link all of them to conceptualise characteristics of alliance learning. In Chapter 7, the discussion covers:

- The characteristics of learning within alliances (the twin loops of alliance knowledge sharing).
- Airline alliance knowledge flow structures in Thailand.
- The contrast between intra and inter-organisational learning.

7.2 The Characteristics of Learning within Alliances

Learning and sharing good practices support the alliance knowledge creation process in updating and upgrading performances of all knowledge encounters (Khamseh and Jolly, 2008; Child *et al*, 2005; Kamoche, 1997). Learning within alliances is linked to various factors including shared knowledge, tensions in knowledge sharing, the extensive range of conditions in knowledge transfer, and multi learning environments (Larsson *et al*, 1998; Alejandro and Jose Anastasio, 2002). Specifically, the number of involved parties, values in collaboration, cognitions, extent of social context, and relevant elements make alliance knowledge sharing more complex than at the intra-organisational level (Grieves *et al*, 2006; Arnold *et al*, 2005).

The themes highlighted from the identified dynamics in AKM (from Chapters 4, 5, and 6) provide the basis for further exploration of the characteristics of learning within alliances. The outcomes up to this point answer the research questions (regarding areas that alliance members can learn, the ways they learn, and the ways the learning happens) and respond to the identified knowledge gap of AKM in terms of the factors in alliance knowledge sharing and their roles. Further exploration is

expected to achieve a greater understanding of the ways alliance learning happens by focusing on the relationships between the identified dynamics.

Therefore, the sub sections below discuss the issues of:

- The linkage between the findings and the previous studies.
- The configuration of alliances' learning characteristics.

7.2.1 The Linkage between the Findings and the Previous Studies

The outcomes from the investigation in Phase 1 and 2 (which relate to the intra-organisational perspective and are the bases of the identified main findings) also embrace organisational learning elements indicated in Stonehouse and Pemberton (1999)'s framework. It is because AKM links to the characteristics of intra and inter-organisational issues as in the discussion in section 2.2 (e.g. Hasgall and Shoham, 2008).

From analysing the primary data, the description by respondents details the similarity of associated events and methods such as meeting, contact by phone, and e-mail with colleagues both within and between organisations. The understanding is drawn from the indication by Peter in Phase 1 that "*Use of general technologies such as telephone, fax, teletext, e-mail or mail depend on each case.*", the description from Sara in Phase 1 that "*we have many levels of cooperation...at the beginning we will start with sending e-mails*", the explanation from Luna in Phase 1 that "*we use*

telephone, teletext and e-mail. It depends.", and the positive agreements on the use of ICT as a basic skill in daily working practice in the statements B1 and B2 in Phase 2.

Additionally, in the studies of Child *et al* (2005), Culpan (2002), and Hamel (1991), alliance knowledge sharing is constructed from the connections between intra and inter-organisational learning systems. It reflects the relationships between these systems. The relationships also emerge in this study. Basically, both intra and inter-organisational leaning proceed and are enabled by individuals (as indicated in the sections regarding knowledge sharing channels (4.3.4), knowledge sharing activities (5.3.3), leadership (6.3.2), and the structures of alliance knowledge flows (6.3.3)). In the perspective of the learning system, the discussion in section 5.3.3 on knowledge sharing activities proposes a comprehensive view. It shows that the dynamics from knowledge sharing activities connect with the interactions between knowledge forms, individuals, and organisational learning in upgrading and updating the acquired knowledge under the processes of formalisation-storage, generation, diffusion-coordination, and group exposure.

From the previous paragraphs, the findings offer similar elements in intra and inter-organisational learning in terms of:

1). Individuals are the critical knowledge agent. This agrees with a number of the previous studies such as Senge, 2006; Bhatt, 1998; Polanyi, 1966 as discussed in sections 4.3.4, 5.3.3, 6.3.2, and 6.3.3.

2). Learning processes in intra-organisational level are the parts of the learning process in alliance network. The issue responds with the studies of Das and Kumar, 2007; Campos and Sanchez, 2003 as argued in section 5.3.3.

3). Both intra and inter-organisational learning integrate with similar categories of the learning input-output factors such as individual knowledge, reports, records, etc. These features are also indicated in the studies of Child *et al*, 2005; Bhatt, 2001; Davenport and Prusak, 2000 as discussed in sections 4.3.4 and 5.3.2.

4). Some characteristics of learning environments exist in both intra and inter-organisational learning such as relationship between knowledge encounters, knowledge sharing facilitations, integration with ICTs, and leader dependence. These agree with the works of Grieves *et al*, 2006; Das, 2005; Fenwick and Mcmillan, 2005; Gulati, 1995. (see the discussions in sections 4.3.1, 4.3.2, 4.3.3, 5.31, 6.3.1, 6.3.2, and 6.3.3)

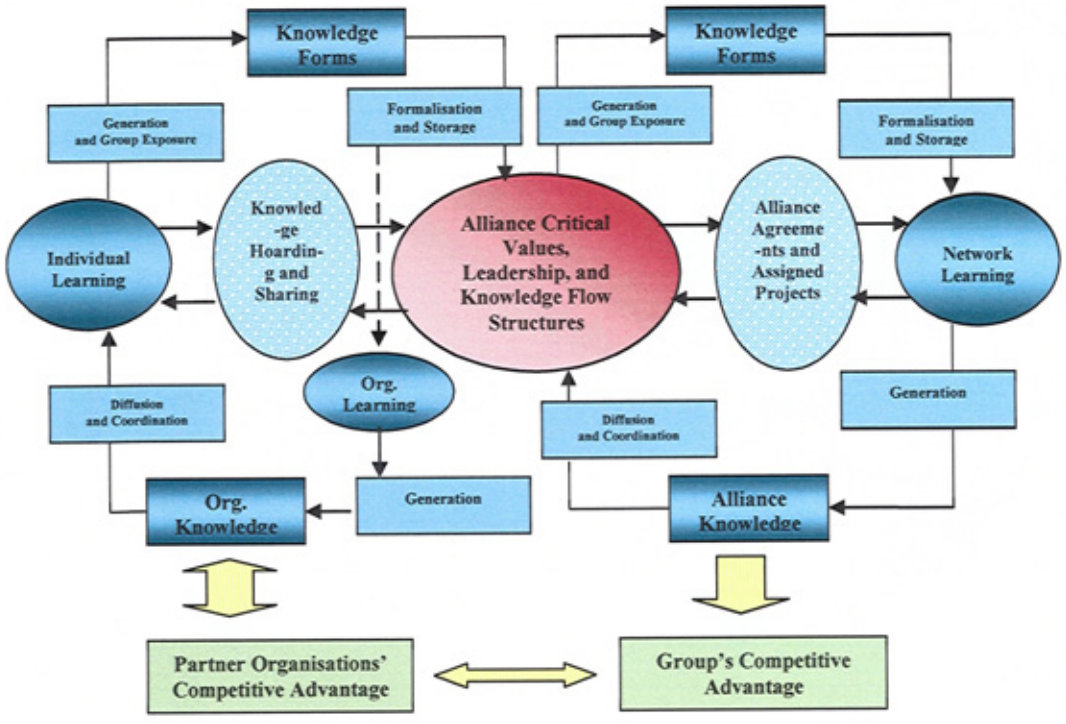
The linkage between the outcomes from the primary research and the previous studies will be utilised in synthesising the characteristics of learning within alliances in the next sub section.

7.2.2 The Configuration of Alliances' Learning Characteristics

The development of the research process and the sequence of the investigation embraces the issues in chapter 6 concerning the learning environments as the main findings from the empirical investigation. Regarding the learning environment as the critical dynamic in AKM, the alliance learning system is more complex than organisational learning in terms of the integration with the knowledge agent from partner organisations, more loops of the learning process to complete alliance learning, the interrelated input-output factors between organisations and the more

complex of the learning environment. Using the research outcomes together with Stonehouse and Pemberton (1999)'s framework on intelligent organisational learning, Figure 7-1 illustrates the features of the alliance learning.

Figure 7-1: The Twin Loops of Alliance learning



Source: Developed from Stonehouse and Pemberton (1999)

The diagram shows the connections between partner organisations and alliance network in the sharing of knowledge. All elements are important parts for the creation of the alliance learning system. Nevertheless, from the study, alliance critical values, leadership, and knowledge structures are the crux of the system. They limit what knowledge to share, who to share knowledge with, and how to share. They facilitate the flow of knowledge in supporting, guiding, directing, and creating confidence in learning and sharing knowledge between organisations. Although their characteristics are confined by the alliance agreements and the assigned local projects, they influence the patterns of the knowledge sharing and the possible knowledge hoarding behaviour of all knowledge encounters in alliance network. Furthermore, they are the basic principles in connecting knowledge flows between partners in creating alliance knowledge and underlining the collectively developed practices from the collaboration. Based on the indicated features, the relationship of the competitive advantage between the group and partner organisations are linked together.

In terms of knowledge creation, the twin loops integrate individual learning as the initial source of the alliance learning system in which enables organisational and network learning as discussed in section 5.3.3 and 6.3.2. This agrees with the studies of Hasgall and Shoham (2008) and Stonehouse and Pemberton (1999) on the criticality of individual learning in organisational learning both intra and inter-organisational levels. According to the case of knowledge sharing in airline alliances, individuals (airline representatives) develop and create alliance knowledge by the process of network learning. Performance is improved and enriched by knowledge conversion processes under inter-organisational learning processes and multi organisational environments (as detailed in section 4.3.4, 5.3.1, and 6.3).

Based on the understanding derived from the empirical evidence, the crux of the learning within alliances concerning alliance critical values, leadership, and the structure of alliance knowledge flow influences and is influenced by individuals (local alliance leaders and airline representatives), the characteristics of the member airlines (structure, system, and infrastructure), and the alliance network (project management) The finding provides the detail of the issues raised by other studies such as the influence of environment in alliance learning by Khamseh and Jolly (2008), social context by Grieves *et al* (2006), and learning barriers by Stonehouse and Pemberton (1999).

Based on the outcomes from section 4.3.2 and 6.3 (e.g. the discussion with the study of Escriba-Esteve and Urra-Urbieta (2002) which focus on knowledge-based perspective and the cooperative agreements), the agreements and assigned alliance projects are the guidelines for the setting of the critical values, the utilised leadership style, and the characteristic of alliance knowledge flow structure. In practice, these environments define the relationships between members, alliance interaction patterns, contents in knowledge flow, and potential knowledge activities.

Individuals (airlines representatives) construct the shared knowledge to and from alliance networks. They associate with other employees of their own organisations and distribute the gained knowledge from the alliance learning. In linking the findings in section 4.3.2, 5.3.3, and 6.3.1 with the studies of Bhatt (2002) Nonaka *et al* (2000) on organisational knowledge creation, we see that the associations with internal colleagues are related to knowledge conversion processes between individual, organisational, and alliance knowledge. These associations offer the opportunities to

sustain organisational competitive advantage via the integration and development between each affiliated organisation's and alliance's core competencies (e.g. Das and Kumar, 2007; Fenwick and Mcmillan, 2005; Grant and Baden-Fuller, 2004; Hamel *et al*, 1989).

The loops in alliance learning are the connected chains of synergistic knowledge creation. It is because individual organisations' and groups' competitive advantages have correlated relationships (as mentioned in the analysis chapters and the indications by Child *et al*, 2005; Cimon, 2004; Davenport and Prusak, 2000). Therefore, the success in every level of learning is important to others. In addition, factors that affect individual learning can affect knowledge performance of organisations and alliance networks.

The following discussion on the configuration of alliance learning characteristics concern airline alliance knowledge flow structures in Thailand and the contrast between intra and inter-organisational learning.

7.3 Airline Alliance Knowledge Flow Structures in Thailand

With regard to Figure 7-1 which is based on the findings of this study, the structure of alliance knowledge flow is the one of the most critical factors in defining the characteristics of learning within alliances. According to the information from the

primary research participants, the gained understandings on the dynamics of AKM also indicate the issues relevant to characteristics of airline alliances in Thailand, the structures of collaboration, and the flows of the assigned collaborative projects. To explain alliance knowledge flow structures, this synthesis will improve understanding of the ways knowledge is distributed, shared, created, and further developed within the airline alliance networks in Thailand. In addition, the configuration of the knowledge flow structures will support exploration of the relationships between the AKM dynamics.

From the main findings in Chapter 6 regarding the structure of knowledge flow, the airline alliance knowledge flows in Thailand have decentralised structure and flexible cross-discipline operation. These are determined from the evidence in the interviews regarding the characteristics of the network structures. For instance, **Vernon** directly states "XXX has decentralised structure". Stephen and William explain the decentralised structures of their networks for the locally assigned projects in Thailand. They describe the knowledge flow structures in their networks as uncomplicated. The management is locally arranged. The responsibilities are distributed to partner airlines as departments in an organisation. These descriptions are in the excerpts in section 6.3.3.1.

From the outcomes in Chapter 5 concerning learning culture and management system, significant differences between the three networks exist. The differences affect the characteristics of their knowledge flows; for example, the different attitudes on the importance of knowledge sharing (A2), value placed in the sharing of knowledge (A3), and the outcomes regarding knowledge sharing events (D2) (as presented in

Figure 5-1). Moreover, the descriptive statistics (See Figure 5-2) provide more details of the differences. Thus, consideration of the statistical significance of the outcomes and the details on the differences from the descriptive statistics are also help to explain the configuration of the airline alliance knowledge flow structures.

The findings on knowledge application levels, alliance reasons, satisfaction on the reciprocal benefits, and knowledge sharing channels from the analysis in Chapter 4 increase the understanding of alliance knowledge flows in terms of the nature of airline alliance knowledge sharing (as discussed in section 4.3.1), the related knowledge sharing activities (see in section 4.3.2), the incurred relationships between knowledge agents (from section 4.3.3), and the possible directions of knowledge flows (as presented in section 4.3.4).

The characteristics of alliance knowledge flow structures are influenced by the distinctive natures of Thai airline alliances. These distinctive natures, which have been identified from the primary research and the literature review include:

- Local operation is based on the assigned projects and alliance framework from the head office level (as discussed in section 6.3.3).
- The emergence of cross networks association. For instance, airlines outside Star Alliance also cooperate with Thai International Airlines which is the flag carrier of Thailand (as indicated in sections 4.3.3 and 6.3.1.3).
- Thai International Airlines which is the co-founder of Star Alliance is the major catering supply and ground handling for airline businesses in Thailand (Thai International Airlines, 2006).

- There are two categories of airline alliance leaders in Thailand: the leader from alliance head office and the leaders from the member airlines (see section 6.3.2).
- The outcomes from the alliance activities must comply with the regulations from IATA and ICAO and should be creative under Thai Aviation Act and aviation agreements of Thailand (bilateral and multilateral agreements with the paired countries). (Airport of Thailand, 2007; Fan *et al*, 2001; Narapong, 2001; Oum *et al*, 2001) (see also in section 4.3.2)
- Various aviation materials are supplied by government enterprises such as fuel, ground services, etc (90 years Thailand Ministry of Transport, 2002).
- Based on the growing number of the operational airlines in Thailand, the more local collaborating knowledge activities would happen (Airport of Thailand's Annual Report, 2007; AOT's Statistic Reports, 2006).

The meaning and practices of alliance are generally applied in a similar way by all the network respondents. This could be related to the nature of airline operations within similar environments as indicated in the list above. In addition, this could be derived from the view that airline alliances are embraced as the agreement for working together in specific collaborative activities, marketing in particular (Hanlon, 2007; Doganis, 2006; Kleymann, 2005). In spite of the similarity, in practice, the three groups have a number of different patterns and degrees of working together. Therefore, the characteristics of the three groups in terms of knowledge flow structure will be further discussed in the next sub sections.

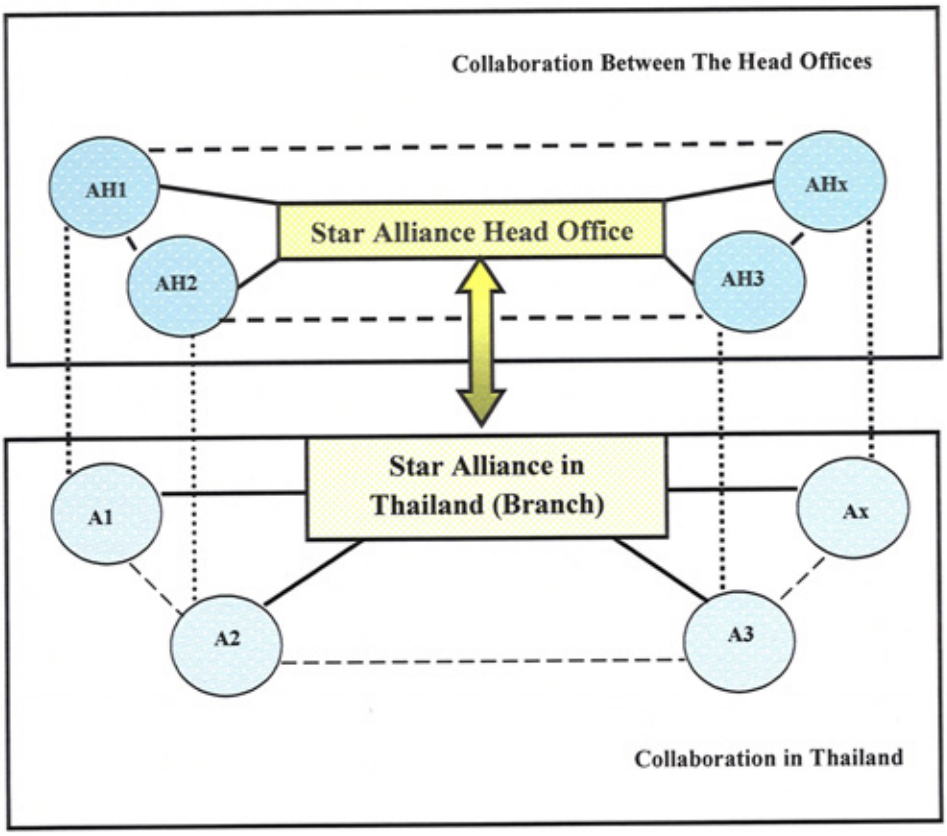
7.3.1 Star Alliance

Using the information given by the respondents in Star Alliance, the characteristics of this network can be determined from the research and the discussions in the literature (from section 2.4). Star Alliance was established as the marketing organisation of the partner airlines based on the concept of world seamless travelling network (Thai International Airways, 2007; Evans, 2001; Merchand, 2000).

By operating as the airlines' subsidiary organisation for marketing, the respondents state that selected employees from the member airlines are responsible for coordination between their own airlines and this marketing organisation. On this issue, the respondents add that Star Alliance also has its own employees. According to the information from the alliance respondent, in the corporate affairs department, directors of corporate affairs in five regions (Asia, Oceania, Europe, North America, and South America) support and coordinate with local airline representatives. Thus, the structure of the network is decentralised (Schein, 2004; Mintzberg, 1983).

Furthermore, the respondents point out that the group has a solid trust from partners on regional management more than other networks as it has a group coordinator who is the direct employee of Star Alliance (Werther, 1998; Gulati, 1995). Based on these characteristics, knowledge flow structure of Star Alliance is configured in Figure 7-2.

Figure 7-2: Star Alliance's Knowledge Flow Structure in Thailand



= Knowledge Interactions between Partners

= Following up on Collaborative Knowledge sharing

= Knowledge Flows on Collaborative Activities

= The Assigned Alliance Knowledge Sharing Activities

AH = Airline Head Office

A = Airline Branch in Thailand

From Figure 7-2, the knowledge flow structure of the Star Alliance's collaboration in Thailand has connections with the head office levels in terms of project assignment and reporting results. In Star Alliance, the assigned projects are distributed from the head office of the group to the Star Alliance branch in Thailand. The director of corporate affairs in Thailand distributes the collaborative projects and budgets to local partner airlines. The local airline representatives coordinate with their colleagues or staff to complete the assigned project and also report the outcomes to their head office. In practice, knowledge flows within the group can be a one-way or two-way flow. It depends on context of the shared knowledge.

From this, the collaboration and the distribution of knowledge activities of Star Alliance in Thailand are centred at the branch of the group in Thailand. The span of control and collaborative management is locally set and highly dependent on the leadership of the director of corporate affairs who assigns, guides, coordinates, and follows up the collaborative projects (Mintzberg et al, 2003). Regarding the style of leadership described by the respondents from Star Alliance (as indicated in sections 4.3.3 and 6.3.2), the atmosphere of knowledge interactions in this group tends to be collegial and friendly. In accordance with Thai characteristics of a good social relationship, charisma, gratefulness, and face saving (Sathaporn, 2006; Rodsutti and Makayathorn, 2005; Komin, 1999), the created knowledge sharing atmosphere by the underlined leadership style supports the flow of knowledge by reinforcement (Huczynski and Buchanan, 2006; Mckenna 2006). Additionally, it reflects that the management in Star Alliance in Thailand contains a mix of compromise and collaborative styles to correspond with the incurred situations (Noypayak and Speece, 1998; Swierczek, 1997).

Thus, the structure of Star Alliance knowledge flow is influenced by the concept of collectivism. The flows of knowledge of this group are based on decentralised structure for local collaboration. The underlying principle for local collaboration is about collective responsibilities for collective results.

7.3.2 Sky Team Alliance

In the case of Sky Team Alliance, the statements and the indications from the primary research participants are the main source for understanding of the knowledge flow structure of the group. Sky Team Alliance embraces the founder airlines in a previous alliance network (Wings) (see section 2.4.2 and Table 2-7).

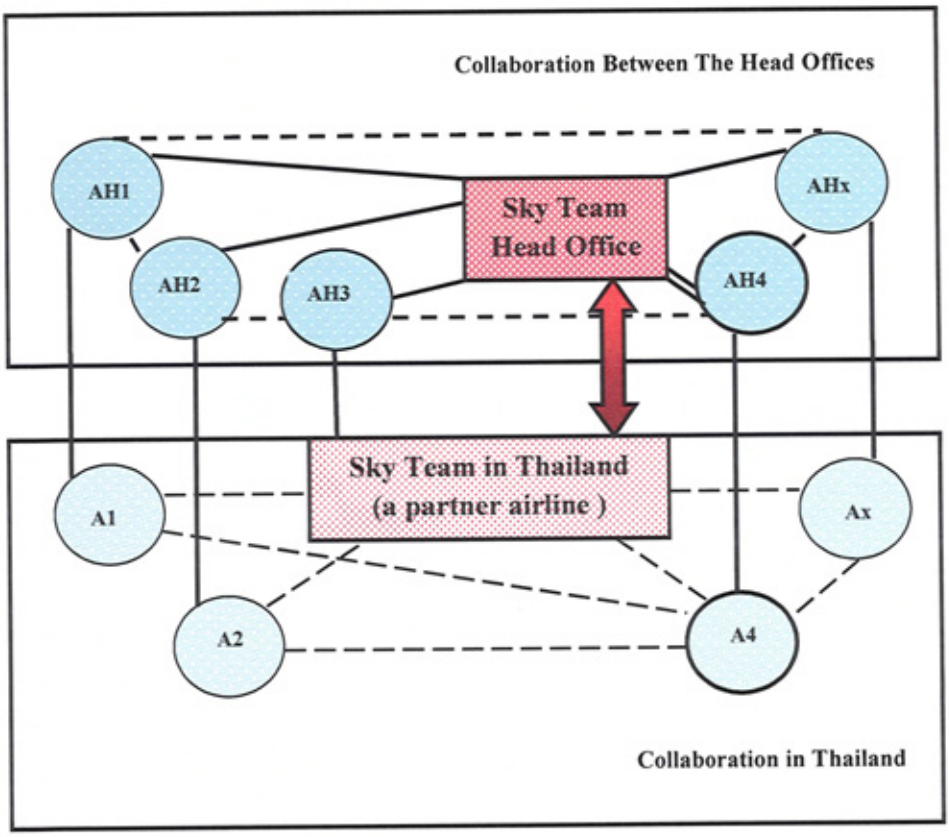
The respondents reveal that the management principle of Sky Team is founded on building team work and connections rather than creating a unified system for specific activities (Oum *et al*, 2000). According to the research participants, their recent strategic network expansion has been influenced by the movements of Star Alliance and Oneworld. However, the group sees Star Alliance as its targeted competitor (Hanlon, 2007; Gudmundsson and Lechner, 2006; Culpan, 2002).

The respondents further imparted that a member airline in Thailand acts as a treasury as well as coordinator for the local collaboration. Nevertheless, a number of airline respondents indicated that another partner airline also has a crucial role in managing alliance activities. They add that airline members in the local market regard both the

alliance leader airline in Thailand and another alliance member airline as the main coordinators. The findings from Phase 3 and Phase 2 suggest that airline members in this group consider responsibilities in their own organisations as a priority (see the excerpts in section 6.3.1.3 and the descriptive statistic outcomes of this group). Moreover, the respondent airlines claim that they closely cooperate and communicate with their head offices on alliance projects.

Using the information from the respondents and the statistical information on this group as presented above, the knowledge flow structure of Sky Team Alliance is configured in Figure 7-3. Sky Team Alliance's knowledge flow structure has a partner airline responsible for cooperation between the group's head office and local partner airlines. This partner airline focuses on budget and information distribution for local collaboration. However, there is another local partner airline which is also one of the founders of the group and its head office has crucial strategic roles in Sky Team collaborative projects. At present, not only the main airline coordinator, but this airline also has influence on the management of local management of the group. Notwithstanding the existence of local collaboration, the partner airlines cooperate closely with their head offices on assigned projects.

Figure 7-3: Sky Team Alliance's Knowledge Flow Structure in Thailand



= Knowledge Interactions between Partners

= The Centre flow of Alliance Knowledge Activities' Initiation

= Knowledge Flows on Collaborative Activities

= The Assigned Alliance Knowledge Sharing Activities

AH = Airline Head Office

A = Airline Branch in Thailand

The characteristics of local collaboration of Sky Team highlight the relationships between the partner airlines and their head offices on collaborative activities. The local management of the group focuses on managing the budget and distributes information. These show the roles of airlines' head offices in local collaborative activities. These increase the ease of control for project achievement.

However, these roles can erode the focus on collective social relationship values in the local alliance in which is important for knowledge sharing to improve performances (Hofstede, 1993 and 1985). Apart from the agreements that reinforce knowledge sharing (Inkpen, 1998), the issues of alliance knowledge sharing embrace the delicate influencing factors that might not be obvious in the knowledge transfer principles (Das and Kumar, 2007). Regarding the view of Khanna *et al* (1998) on competition in cooperation, evidence of the knowledge hoarding behaviours is shown by the respondents (see the indications in sections 5.3.2 and 6.3.1.3). Thus, the collaborative characteristics of this group increase the likelihood of knowledge hoarding which could affect the quality of the shared knowledge within the knowledge flow structure (Stonehouse *et al*, 2001).

The leadership style and the influences from knowledge flow natures can affect individuals' knowledge sharing behaviours (Jones *et al*, 2003). The local collaborative coordinators of Sky Team focus on delegation and empowerment (as indicated in section 6.3.2) (Lewin *et al*, 1939). If empowerment and encouragement support individuals to develop intrinsic learning value (Cook and Cook, 2005), knowledge sharing activities have the potential to relate more with personal principles, viewpoint, and judgement under the alliance agreements. At present, the

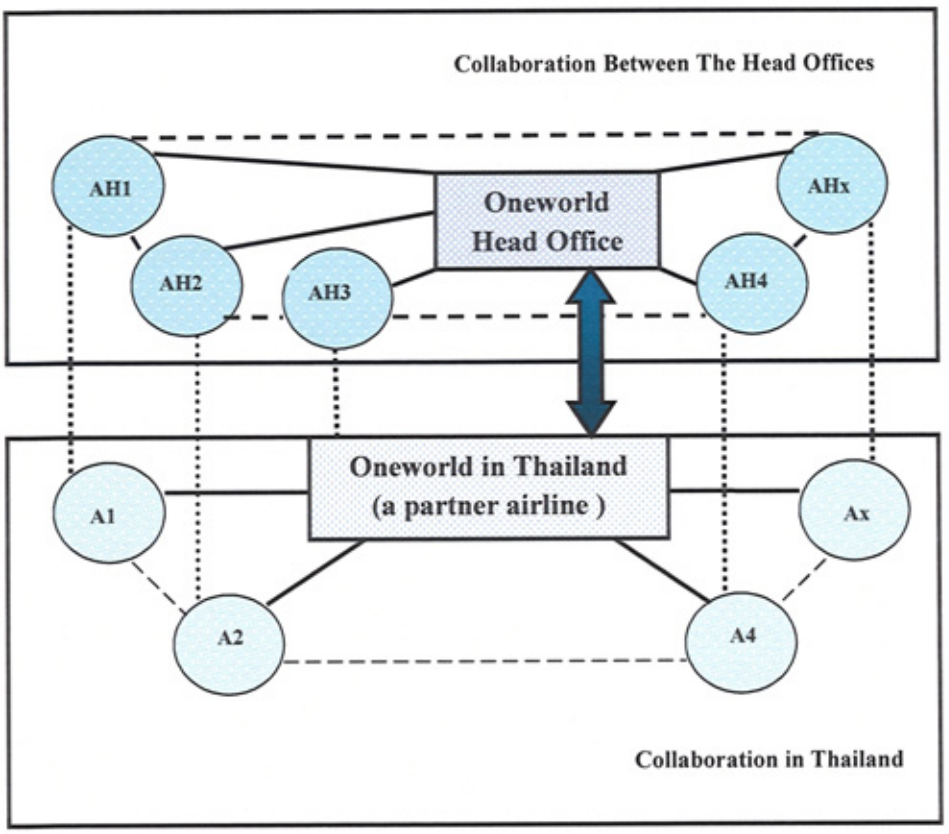
balance between collectivism and individualism within this group could have significant effects on the facilitation and inhibition of knowledge flows (Khamseh and Jolly, 2008; Stonehouse *et al*, 2001; Hofstede, 1993). Moreover, the alliance respondent of this group aims to create a good relationship. Hence, the ways he handles the situations tend to be under a compromised style (Swierczek, 1997).

From the discussion above, it can be concluded that the distinct characteristics of the local Sky Team's knowledge flow structure in Thailand integrates with the limited characteristics of collectivism, focus on good relationships and team work to support the cooperation with head offices. Besides, knowledge flows within the group can be a one-way or two-way flow as the local coordinator claims that he always assures understanding by encouraging individuals to ask questions and follow up on the progression of the assigned job-tasks. Therefore, one-way or two-way knowledge flow in the presented structure depends on context of the shared knowledge.

7.3.3 Oneworld Alliance

According to the respondents in Oneworld Alliance, in Thailand, the main management officer of the group comes from a partner airline. While strategic activities and budgets are set from the management board and decided in the Oneworld head office in Vancouver, the local hub organises its own activities

Figure 7-4: Oneworld Alliance's Knowledge Flow Structure in Thailand



- - - - - - - -	= Knowledge Interactions between Partners
.....	= Following up on Collaborative Knowledge Sharing
———	= Knowledge Flows on Collaborative Activities
⟷	= The Assigned Alliance Knowledge Sharing Activities
AH	= Airline Head Office
A	= Airline Branch in Thailand

(as presented in sections 4.3.4, 6.3.1.3, and 6.3.3.1). Nevertheless, the local organisation must comply with policy and the assigned strategic projects from the head office. Based on the aspects of local management activity setting and flexible management, the alliance network respondent of this group notes that Oneworld's local structure is decentralised (Bloisi *et al*, 2003; Mintzberg, 1983).

The airline respondents added that they closely cooperate with their local partners. Budgets and projects are requested and sent to the local leader of the group who further arranges and assigns collaborative job-tasks to the other local partners of the group. Each airline partner reports to its head office for the project outcomes. The structure of Oneworld Alliance knowledge flow in Thailand is shown in Figure 7-4.

From Figure 7-4, Oneworld Alliance has more similar knowledge flow and control to Star Alliance than Sky Team, regarding the roles of local collaborative leaders in all local management activities. In consideration with Mintzberg et al (2003) on the influences towards operational structure, the collaboration and the distribution of knowledge activities of Oneworld in Thailand are centred on the main local coordinator of the group. Hence, the control and collaborative management is locally set and highly dependent on leadership by the main local coordinator who assigns, guides, coordinates, and follows up all collaborative projects.

However, the local collaboration of Oneworld Alliance has a similar structure to Sky Team in that it uses a partner airline that dominates the local market as the main coordinator. The respondents see the success of the alliance network as the success of every airline in the group (indicated in the excerpts in section 4.3.3). This notion

reflects the embracing of collectivism in the knowledge community of this local collaboration (Hofstede, 1993 and 1983). It is a critical principle that facilitates of the shared knowledge that flows in the structure.

In fact, although collaborative culture is dependent on structure and control from the head offices, it is also influenced by local leadership style of the group (Senge, 2006; Nonaka *et al*, 2000). The airline respondents portray local job-task interactions of the group as friendly cooperation (see the statistic results of this group in Figure 5-6). In addition, the leadership style which is emerged from the empirical investigation with the local leader of this group, is focused on delegation and empowerment (illustrated in section 6.3.2 and indicated from descriptive statistical outcomes in Figure 5-2). It illustrates the supportive atmosphere of the local management arrangement. The lack of an appraisal system for collaboration between partner airlines together with the leadership style, suggest that the ways to facilitate the flows of knowledge within Oneworld are by reinforcement (Huczynski and Buchanan, 2006; Mckenna 2006).

Thai characteristics are also important to knowledge sharing in this network as the respondents are concerned with smooth interpersonal relationships as the driver for task achievement in the collaborations between airline representatives (Swierczek and Onishi, 2003; Komin, 1999 and 1990) (see sections 4.3.3 and 6.3.1.2). In terms of knowledge flow direction, the research participants mentioned that on job-task distribution and outcome follow up are the basis of their interactions in collaboration. Thus, knowledge flows within this group can be one-way or two -way. It depends on the context of the shared knowledge.

7.3.4 Discussion on the Knowledge Flow Structures of the Three Networks

The knowledge flow structures of the three alliance networks are flat due to a small number of individuals' involvement. The structures focus on selective and specific responsibilities (such as marketing and joint technological platforms) which are the territories of their knowledge activities. The management of local collaborations in the three networks is in the form of peer working rather than hierarchical command. The roles of the head offices in local collaboration, the knowledge interactions between local alliance partners, leadership style and span of control are the differences derived from characteristics of knowledge flow structures of the three networks. Other differences include enthusiasm towards alliance obligations, and the balance between peers and control for job-task achievement.

The configuration of the alliance knowledge flow structures provides additional and more specific understanding on the ways knowledge sharing happens in local collaboration of airline alliances. Importantly, the nature of each alliance knowledge flow structure influences the behaviour of knowledge encounters and other factors in AKM. In the next section, the discussion in this section will be used to identify the similarities and differences between intra and inter-organisational learning in order to explain the relationships between elements in the alliance learning.

7.4 The Contrast between Intra and Inter-Organisational Learning

Alliance networks engage with intra and inter-organisational learning. This is because knowledge sharing in alliance networks has an interrelated cycle between alliance organisation, multi co-operations between alliance members, and knowledge creation within partner organisations (Khamseh and Jolly, 2008; Linnarsson and Werr, 2004; Dussauge *et al*, 2000; Larsson *et al*, 1998).

This section discusses the characteristics of the twin loops of alliance learning in terms of the similarities and differences between intra and inter-organisational learning. The elements in the intelligent organisational learning loops by Stonehouse and Pemberton (1999) and the findings from the primary research are discussed by their functions.

For this study, the intelligent organisational learning loops are regarded as an intra-organisational learning matrix. That is, the loops are presented in the learning within each partner organisation. As for learning between organisations, it will be derived from the findings. Furthermore, the nature of intra-organisational learning (from Stonehouse and Pemberton (1999)'s framework) will be discussed with the natures of inter-organisational learning (from the identified dynamics in AKM of this study).

The sub sections below discuss intra-organisational learning in alliance networks, inter-organisational learning, and the similarities and differences between intra and inter-organisational learning.

7.4.1 Intra-Organisational Learning in Alliance Networks

The outcomes of primary research in Phases 1 and 2 can be utilised in exploring the nature of intra-organisational learning in AKM. As mentioned in reviewing the literature in Chapter 2, the papers on the subject of KM cover input and output factors, learning processes, knowledge creations, and learning environments. These are fundamentally related to the functions of elements in the knowledge system. Therefore, the four functions will be employed in considering the elements of Stonehouse and Pemberton (1999)'s organisational learning loops and identifying dynamics in AKM in this sub section. In this study:

- ***Input and output factors*** are about the functions of the supplies for knowledge creation (Senge, 2006 and 1992; Davenport and Prusak, 2000; Polanyi, 1974).
- In the case of ***learning processes***, these are the functions regarding the processes of knowledge transformation from one form to another and from one agent (individuals and knowledge materials) to others (Hasgall and Shoham, 2008; Argyris and Schon, 1996; Nonaka and Takeuchi, 1995).

- As for ***knowledge creations***, these are the functions in developing and creating knowledge (Bhatt, 2002; Bontis *et al*, 2002; Pemberton and Stonehouse, 2000).
- Regarding ***learning environments***, these functions refer to the elements that force learning patterns in the knowledge system (Grieves *et al*, 2006; Das, 2005; Khanna *et al*, 1998).

The framework of the intelligent organisational learning loops by Stonehouse and Pemberton (1999) as presented in Figure 2-3 in Chapter 2 is composed of ten elements. Table 7-1 illustrates the functions of the ten elements in Stonehouse and Pemberton (1999)'s organisational learning loops.

From the table, ***knowledge forms, organisational knowledge, and core competence*** contain the functions of input and output factors in organisational learning. They can be the output factors of a knowledge interaction as well as be the input factors of other knowledge interactions. These relationships are derived from the natures of knowledge creation where knowledge is created cyclically and connected between encounters in synergistic relationship (Campos and Sanchez, 2003; Gill, 2000). From the investigation, the respondents transfer and develop knowledge forms to create organisational knowledge (as discussed in section 5.3.3) via various knowledge sharing channels (see section 4.3.4). Moreover, the input and output factors required ICTs in supporting knowledge interactions (as presented in section 5.3.2).

Table 7-1: Functions of the Ten Elements in Organisational Learning System

Ten Elements of Organisational Learning System	Functions in Organisational Learning System			
	Input-Output Factors	Learning Processes	K. Creation	Learning Environments
1). Knowledge Forms	•			
2). Formalisation-Storage		•		
3). Organisational Learning			•	
4). Generation		•		
5). Organisational Knowledge	•			
6). Diffusion-Coordination		•		
7). Individual Learning			•	
8). Generation-Group Exposure		•		
9). Culture-Structure-Communication Infrastructure				•
10). Core Competence	•			

Formalisation-storage, generation, diffusion-coordination, and generation-group exposure accompany the learning process function. These elements are the formats of knowledge sharing (Li and Gao, 2003; Bhatt, 1998; Nonaka, 1991). According to Nonaka and Takeuchi (1995), conversions of knowledge forms are the interactions between individuals and between individuals and knowledge materials. In practice, their knowledge conversion processes are parts of the formats of knowledge sharing,

such as the elements of the learning process function in the organisational learning loops.

The elements under the function of the learning process are also reflected in the primary research outcomes regarding the ways knowledge is created. The respondents explained their knowledge sharing processes are mainly in socialisations and the utilisation of ICTs in their daily job-tasks to gain benefits from the collaborative activities (as stated in sections 4.3.2 and 4.3.4). In addition, the derived issues regarding the characteristics of the four elements (formalisation-storage, generation, diffusion-coordination, and generation-group exposure) can also be exemplified by the cases of the knowledge facilitated factors in section 4.3.1, the issues of the dynamics of ICTs utilisation in section 5.3.2 (roles of ICTs in codification and personalisation strategies), and knowledge sharing activities in section 5.3.3. Therefore, the characteristics of these four elements can be derived from the empirical study:

- Formalisation-storage is the process of organisational knowledge creation which practically aims to articulate and connect knowledge (as described with the study of Kolosz, 2006 in section 2.2.2.1).
- Generation is the process of developing knowledge in which is about upgrading and updating tacit and explicit knowledge (see the discussion on Nonaka, 1991's knowledge conversion process in section 5.3.3).
- Diffusion-coordination is the process of knowledge distribution and interactions (as indicated in the discussion with the studies of Maguire and Redman, 2007; Smoliar, 2003 in section 5.3.2 and 5.3.3).

- Group exposure is the process of the extensive knowledge sharing with a number of individuals which are basically engaged in a personalisation strategy of managing knowledge (e.g. in the discussion with the study of Jasimuddin *et al*, 2005 in section 5.3.2).

Organisational and individual learning engage with the knowledge creation function. As discussed in section 5.3.3, the creation of organisational knowledge is through producing explicit knowledge from the developed tacit knowledge. The creation of organisational knowledge is highly dependent on individual knowledge creation because organisations can learn when individuals learn (Senge, 2006; Kamoche, 1997). If knowledge has to be transformed for further upgrading, the creation of organisational knowledge naturally relates to the externalisation process of Nonaka and Takeuchi (1995)'s knowledge conversions. Moreover, the components for creating knowledge in the externalisation process can be produced from other processes in the knowledge creation processes (socialisation, internalisation, and combination) (e.g. Kolosz, 2006; Li and Gao, 2003; Gill, 2000). Hence, the creation and development of organisational as well as individual knowledge are fundamentally related to the learning process.

Culture, structure, and communication infrastructure have the functions of learning environments due to their roles in confining, enforcing, conditioning, and directing the potential flows of knowledge as much as the interactions between knowledge encounters. From the primary data, the practices of the respondents in sharing knowledge influence the characteristics of their knowledge sharing system (see the details which discussed with the studies of Swierczek and Onishi (2003), Hofstede

(1993), Komin (1990) in section 4.3.1 for the occurred KM practices, section 5.3.1 for the issues of learning culture, and section 6.3.1 for values in the sharing of knowledge).

As for the structure of their organisations, it influences authority of knowledge encounters, relationship between them, and the possible flows of knowledge sharing (e.g. Maguire and Redman, 2007; Waring, 2004; Smoliar, 2003) (as indicated in section 6.3.3 and the configuration of alliance knowledge flow structures in section 7.2.1). In the case of communication infrastructure, its quality, compatibility, and stability are critical in terms of knowledge sharing enabling and facilitations as presented in sections 4.3.4 and 5.3.2 and the discussions with the studies of Bloisi *et al* (2003), and Gould (1999).

In addition, to relate the outcomes with the study of Grieves *et al* (2006) on learning barriers, the learning environments create the incurred learning atmospheres. Meanwhile, the findings from the primary research agree with the existing studies (such as Das and Kumar, 2007; Fenwick and Mcmillan, 2005; Stonehouse and Pemberton, 1999) that the learning environments are reshaped by the changed learning atmosphere.

7.4.2 Inter-organisational Learning in Alliance Networks

The consideration on the empirical findings by their functions in knowledge system is shown in Table 7-2 which includes the dynamics of AKM.

Table 7-2: Functions of the Dynamic Factors in Alliance Learning System

The Dynamics of AKM (the findings)		Functions in Alliance Learning System			
		Input-Output Factors	**Learning Processes**	**K. Creation**	**Learning Environments**
Phase 1	1). KM Application Levels				•
	2). Airline Alliances' Knowledge Sharing Reasons				•
	3). Satisfaction on Knowledge based Reciprocal Benefits				•
	4). Knowledge Sharing Channels	•		•	
Phase 2	5). Dynamics from Learning Culture and Management System				•
	6). Dynamics from ICTs Utilisation	•			
	7). Dynamics from Knowledge Sharing Activities		•	•	
Phase 3	8). Alliance Critical Values				•
	9). Leadership				•
	10). Structures of Alliance Knowledge Flows		•		•

From the discussions in the chapters 4 and 5, ***knowledge sharing channels*** and ***the dynamics from ICTs utilisation*** involve the characteristics of knowledge activities in the function of input and output factors in the sharing of knowledge. The discussions

in section 4.3.4 on the issue of knowledge sharing channels illustrate the ways that tacit knowledge is shared and developed. From the consideration on the outcomes with the studies by Cavusgil *et al* (2003), Haldin-Herrgard (2000), and Polanyi (1974) regarding input of and output from knowledge creation, it leads to the understanding that skills, knowledge behaviours and techniques are the main tacit input and output knowledge.

In addition, the discussions in section 5.3.2 on the issue of the dynamics from ICTs utilisation provide an insight into the ways alliance members create and develop explicit knowledge (Stover, 2004; Herschel *et al*, 2001). The outcomes show instructions, reports, and announcements from local management settings are the main explicit input and output knowledge.

Therefore, the findings from the primary research support the identification of the input and output factors in alliance knowledge sharing activities. The descriptions from the results concerning knowledge sharing channels and the dynamics from ICT utilisation show the linkage between the development of tacit and explicit knowledge in social activities and the employment of technologies.

The issues concerning ***the dynamics from knowledge sharing activities*** and ***the structures of alliance knowledge flows*** relate with the learning process function in alliance knowledge system. The findings explain the nature of the learning processes between collaborating organisations. These processes are mostly about knowledge interactions of individuals. Section 5.3.3 (knowledge sharing activities) shows how the operational processes are linked to knowledge creation. The evidence shows that

individuals are the main organisational knowledge creators. This outcome agrees with the studies of Senge (2006) and Thomas *et al* (2001). Thus, the individual learning process is critical to organisational learning process. The outcome concerning the structure of knowledge flows in collaboration, which is in section 6.3.3, provides an understanding of the influences of the structural patterns towards alliance learning processes. From the findings, the features of the structures shape the characteristics and the organisation of the alliance learning process. The results describe the influence of organisational structure on AKM that was initially proposed by Hasgall and Shoham (2008), Nielsen (2005) and (2002).

The findings in terms of ***knowledge sharing channels*** and ***the dynamics from knowledge sharing activities***, which link to the functions of input and output factors and learning process, also embrace the features of knowledge creation function in alliance knowledge sharing. The findings describe the characteristics of individual and organisational learning in the alliance knowledge creation. In this perspective, the described knowledge sharing within the channels and the involved collaborating activities from the primary evidence specifies the ways individuals and organisations learn. The findings indicate knowledge creation from individual and organisational learning can be in terms of intrinsic and extrinsic learning (as explained with Cook and Cook, 2005 in section 5.3.3 and 6.3.2). Besides, AKM reinforces intrinsic learning as well as constrains extrinsic learning. Together with the studies of Khamseh and Jolly (2008), Huczynski and Buchanan (2006), and Mckenna (2006), the research outcomes suggest operant conditioning by reinforcement in learning is the main approach of knowledge creation management between organisations.

The contents regarding the issues of ***KM application levels, airline alliances' knowledge sharing reasons, satisfaction on knowledge based reciprocal benefits, the dynamics from learning culture and management system, alliance critical values, leadership, and the structures of alliance knowledge flows*** contain characteristics of learning environment function in alliance networks. These themes are the factors that limit the sharing of knowledge in airline alliances (Das and Kumar, 2007). The analysis outcomes together with the study of Stonehouse *et al* (2001), these environments can support or inhibit the flows of knowledge between organisations.

From the empirical evidence, the KM application levels point out the knowledge facilitation factors that organisations integrate with (based on the principle of knowledge journey benchmarking by Payne and Sheehan, 2004; Parlby, 2000). The discussion in section 4.3.1 concludes that knowledge awareness and knowledge enabled types are the characteristics of the informal KM application in the airline industry.

In the case of airline alliances' knowledge sharing motives, these define the territory of knowledge sharing. The respondents explained that their alliance networks focus on marketing issues in order to overcome the limited capabilities that single airlines are confronted with. This outcome confirms parts of the studies by Hanlon (2007), Doganis (2006) and (1998), Kleymann and Seristo (2004), and Oum and Park (1997) regarding the reasons and benefits of collaboration in the airline industry. That is, their studies focus on operative side while the outcomes from this study focus on the issues of learning and knowledge sharing. In section 4.3.2, the main themes of airline

alliances' knowledge sharing reasons are to learn the ways to reduce risk, gain economies (economies of density, scope, and scale), jointly develop technologies, and the methods to react to the competitive circumstances.

Based on the analysis in section 4.3.3, the effects of the satisfaction on reciprocal benefits also reshape the patterns of knowledge sharing as well as confine the distribution of the knowledge towards the assigned responsibility in collaboration. Then, the results of satisfaction on the collaboration are the drivers that affect the relationships in alliance knowledge sharing (Child *et al*, 2005; Chua, 2003).

As for the findings concerning the dynamics from learning culture and management systems, they are the guidance of knowledge sharing behaviours. From the discussion in section 5.3.1, the significance of Thai social relationships, knowledge sharing policy, and the characteristics of the staff empowerment on the responsible job-tasks direct and shape the ways the respondents share knowledge.

Alliance critical values concerning relationship, task achievement, and competition in cooperation values are the critical forces that create the environment of alliance knowledge sharing (as presented in section 6.3.1). The information from the research participants suggests collectivism as the focused relationship value in their collaborations (as described in the study of Hofstede, 1993). However, the knowledge sharing practices in different alliance networks are in different degrees of collectivism. The study by Komin (1999) pinpoints task achievement as the less important value in Thai society. However, in this study, task achievement is the fundamental issue of the collaborating activities of the respondents. In terms of

competition in cooperation value, the evidence from airline alliance respondents support the study of Khanna *et al* (1998) rather than the argument by Inkpen (2000) that collaboration between competitors includes competitive tensions.

Based on the primary research (as indicated in section 6.3.2), the leadership of the alliance in Thailand is based on collegial style according to the nature of equal status between airline representatives. In addition, there is no formal appraisal system in airline alliances and the respondents view alliance leaders as the coordinators. According to the studies of Robbins (2001), Nurmi (1996), Gulati (1995), and Chrislip *et al* (1994), leadership style is the important factor in managing knowledge. Therefore, in accordance with Mckenna (2006), Schein (2004), and Conger (1988) in analysing data in section 5.3.1 and 6.3.2, the leaders control their local collaboration by reinforcement. From the empirical evidences, the characteristics of the airline collaborations in Thailand also depend on the style that alliance leaders use in their management.

From the understanding gained from the discussions regarding the elements in intra and inter-organisational learning, the further discussion in the next section will discuss the similarities and differences between the two levels of organisational learning.

7.4.3 The Similarities and Differences between Intra and Inter-organisational Learning

The descriptions by the research participants in section 6.3.2 of their knowledge interaction routes and together with the three airline alliance knowledge flow structures in Thailand in section 7.3, show that the structure and the flows of knowledge between the three networks contain similar and different characteristics. All of them are locally managed. Nevertheless, the centre of their command, the connection within the network, and the dependence to the local leaders are different. Therefore, the structures of alliance knowledge flows set the order, direction, authority, responsibility, and command in alliance knowledge sharing (e.g. Bloisi *et al*, 2003; Gould, 1999; Scott and Hogg, 1996). From the contrast between intra and inter-organisational learning, the synthesis is concluded in the paragraphs below.

The main findings from the investigation on dynamics of AKM (alliance values, leadership, and alliance knowledge flow structures) are the critical dynamics. They form, shape, and direct learning patterns of alliance networks. From Table 7-2, these dynamics are mostly concerned with the learning environment than the other alliance learning system's functions. In contrast, from Table 7-1 which focuses on intra-organisational learning, the element of the organisational learning system are mostly concerned with the functions of learning processes and input-output factors. Finally, the critical dynamics are the significant factors that make inter-organisational learning more complex than intra-organisational learning.

Notwithstanding the differences between intra and inter-organisational learning, they also contain a number of similar principles and factors. That is, they have similar input and output factors, both of them require similar knowledge creation processes, individuals are the initial learning agents in both intra and inter-organisational learning, the employed leadership style is crucial to the emerged learning patterns, and they have ICTs as the knowledge flow enabling tools.

7.5 Summary

This chapter examines all of the identified AKM dynamics to acquire greater understanding of the ways alliance learning happens. The focus of the discussion is on the relationships between the identified dynamics to gain insight into the characteristics of learning within alliances. The issues discussed in this chapter concerned:

- The use of the existing intra-organisational learning framework to conceptualise the characteristics of learning within alliances based on the findings of this study.
- The configuration of the airline alliance knowledge flow structures to explicitly highlight the relationships, command, knowledge distribution, and nature of local collaboration.
- The analysis of the elements in the intra-organisational learning framework and the identified dynamics to gain insight into the potential similarities and differences between intra and inter-organisational learning.

From the discussion in this chapter, the aim and research questions of this study have been achieved in terms of the gained understanding on the dynamics of AKM. The understanding includes factors in AKM, their roles, and the relationships of these factors based on the gained knowledge in terms of "what alliance members can learn", "how they learn", and how the learning happens".

The discussion on characteristics of learning within alliances reaffirms that the main findings (alliance critical values, leadership, and the structure of alliance knowledge flow) form the link between intra and inter-organisational learning in the alliance networks as shown in Figure 7-1. These main findings are the critical dynamics. They are factors that make inter-organisational learning more complex than intra-organisational learning. Also, the outcomes provide the specific understanding of characteristics of airline alliance knowledge sharing in Thailand.

Therefore, this study proposes that alliance critical values, the integrated leadership style, and the structure of alliance knowledge flow are the main influencing dynamics which connect, outline, force, direct, and support knowledge sharing in alliance networks.

Chapter 8

Conclusions

"*Knowledge advantage is a sustainable advantage.*"

Davenport and Prusak (1998, p.17)

8.1 Introduction

This chapter discusses the concluding issues of this research project. The findings from the investigation and the synthesised frameworks that were presented in Chapters 4-7 are concluded on the achievement of the research aim and the answers to the research questions in the conclusion. These issues are also the critical ground for other concluding issues concerning the contribution of the study, the implications, the limitations, and the suggestions for the future research.

The section regarding contribution of this study to the knowledge explains the originality and distinctiveness based on the issues of the theoretical connections in the literature review, methodology, the investigation outputs, and framework developments. As for the implications on the outcomes of the project, they are proposed in terms of the KM subject and the possible utilisation by the airlines. The limitations are highlighted before the suggestions for the future research according to the overall outputs from this doctoral study.

8.2 Conclusions

This study set out to explore the dynamics of knowledge management in the strategic alliance context by focusing on what members of alliances can learn, the ways they learn, and the ways the learning happens. The investigation focused on the existence of knowledge interactions between partners in the alliance networks to achieve the research aim in understanding the dynamics of AKM.

To understand the dynamics of AKM and to answer the research questions, the focus on knowledge interactions provides insights on the dynamics, their roles and their relationships. In fact, the understandings from the investigation are developed based on the logic of the investigation. That is, the exploration on the dynamics of AKM is progressed by identifying the dynamics to examine characteristics of the dynamics and to trace relationships between the dynamics in order to gain the understanding of the characteristics of alliance learning systems.

From the empirical results, the findings from this doctoral study are in three perspectives. They are:

1). ***The findings from the primary research***: They are the derived outcomes from the analysis of the primary research from phase 1 to 3. These findings are the dynamics under the issues of KM application levels, airline alliance knowledge sharing reasons, satisfaction on knowledge based reciprocal benefits, knowledge sharing channels, learning culture and management system, ICTs utilisation,

knowledge sharing activities, alliance critical values, leadership, structures of alliance knowledge flows.

2). ***The main findings from the primary research***: According to the research design that the later phases of the investigation are developed from the former phases, the main findings from the primary research are the significant dynamics towards AKM under the issues of the critical alliance values, alliance leadership, and the structure of alliance knowledge flow.

3). ***The findings from the whole investigation***: These findings are the outputs developed from all the findings of the primary research. They are the issues of the characteristics of learning within alliances, the airline alliance knowledge flow structures in Thailand, and the contrast between intra and inter-organisational learning.

In terms of the research design, Phase 1 of the primary research was aimed at identifying and understanding the areas that partners in the alliance networks learn which are the sources of the existences of the dynamics in AKM. Phase 2 aimed to focus on the ways alliance members learn and the ways learning happens. The investigation provides the understanding on characteristics of the learning, the learning factors and relationships between these factors. Phase 3 was set to explore the ways alliance networks learn and the ways learning in alliance networks happens. The study in this phase derives the insight on the characteristics of learning, the critical learning factors, and relationships between these factors in alliance knowledge

systems. At this point, the outcomes from the investigation answer the research questions as follows:

Question 1: What can members of an alliance learn?

The findings: Alliance partners learn based on collaborative agreement and their alliance reasons. In the case of airline industry, they learn to improve performance and gain operative benefits (to reduce risks, to gain economies, to develop technologies, to create the greater competitive advantage, to balance competition and co-operation, to improve performance, to develop alliance relationships and to learn about learning).

Question 2: How do they learn?

The findings: Alliance members learn by associations and ICTs utilisation in transforming and developing knowledge from knowledge conversion and individuals' cognitive processes. Nevertheless, there was also evidence of knowledge hoarding behaviour from the associations and ICTs utilisation between partners.

Question3: How does the learning happen?

The findings: Learning happens and positively produces outputs under the appropriate learning facilitated environments. At inter-organisational level, learning happens from the collective learning culture between organisations, creating a positive relationship between representatives, the influences of the choices of leadership styles over types of

subordinate, the compromising between extrinsic learning conditions of individuals and knowledge sharing policy (reinforcement rather than punishment), and the compatibility of ICT systems between partners.

From the conclusions regarding the achievement of the research aim and the answers to the research questions as presented above, the further conclusions of the dynamics of AKM, (which detail characteristics of the dynamics and the relationships between them to explain the characteristics of learning within alliances) are presented in the next paragraphs.

Alliance Critical Dynamics

The findings underline the importance of learning environments as the critical dynamics of AKM. They are the issues regarding alliance critical values (relationship values, the importance of task achievement, and the degree of competition in cooperation), leadership (styles and controlling conflict), and the structure of alliance knowledge flows. These dynamics expand the dimensions of inter-organisational learning to be more complex than intra-organisational learning (Stonehouse and Pemberton, 1999; Larsson *et al*, 1998). They direct, guide, influence, and control other dynamics concerning the issues of input and output factors, learning processes, knowledge creation, and other learning environments (for instance, individual interactions, knowledge sharing decision, channels in sharing knowledge, the utilisation of ICTs, knowledge conversion, and the opportunity to hoard knowledge).

The Dynamics of AKM

The data suggests airline alliance members can learn about local conditions and partners' customers, learn how to effectively utilise resources across functions and in inter-organisational operation, learn to increase operative efficiency and increase aircraft load, learn to develop new knowledge from each other's experience, and learn how to use competitive power as a group to benefit all partners. Nevertheless, the ways alliance members and the networks learn as well as the ways the learning happens also depend on the characteristics and the influences of the other identified knowledge sharing factors, apart from the main pressures of the critical alliance dynamics. These are from KM application levels, satisfaction on the reciprocal benefits, knowledge sharing channels, the learning culture and management policy, the ICTs utilisation, knowledge sharing activities of the individuals, and the consequences from the relationships between them.

KM Application Levels

From the research outcomes, airlines in the alliance networks have informal integration with knowledge management practices. According to the KM benchmark criteria indicated in Parlby (2000) from KPMG, the airlines who participated in the research are in the position of being knowledge aware and enabled organisations. Their KM application levels reflect the knowledge sharing policy they have. The characteristics of their applications to KM affect other knowledge sharing factors such

as the possibility of knowledge sharing activities and the availability and the compatibility of ICTs for the sharing of knowledge.

Satisfaction on the Reciprocal Benefits

The satisfaction on the reciprocal benefits can affect the areas airline members can learn in the future as much as the ways they learn and the ways learning happens. From the study, it relates to the relationship between partners which partially influences their consideration to sustain the collaboration (Khanna *et al*, 1998; Hamel *et al*, 1989). In addition, the evidence on knowledge sharing activities provides the indication on the relationships between the satisfaction of the reciprocal benefits and the trust in sharing knowledge (Child *et al*, 2005).

Alliance Knowledge Sharing Channels

Regarding the results on knowledge sharing channels, they are important to what alliance members can learn. Based on the investigation, it shows the respondents integrate with two main knowledge sharing channels which are the associations and the utilisation of ICTs. Knowledge sharing channels in airline alliances are in meetings, social events, training, and communication by telephone, fax, teletext, newsletter, and e-mails. The integrated channels can facilitate or inhibit the learning (Stonehouse *et al*, 2001). At this point, the characteristics and the quality of the embraced channels in the sharing of knowledge directly affect the ways alliance

partners learn and the ways the learning happens (Yang *et al*, 2007; Smoliar, 2003; Bhatt, 2001).

Learning Culture and Management Systems

The outcomes from the study propose the ways alliance members learn are conditioned by the learning culture and management policy. The KM policy provides formal territory of the options of the integrated knowledge processes (Nonaka and Takeuchi, 1995). In terms of the significance of Thai social relationships, it influences the ways they learn as well as the ways learning happens when Thai cultural aspects are involved in the expression of knowledge interactions (Sathaporn, 2006; Komin, 1990 and 1978). At this point, characteristics of learning within alliances in Thailand embrace the issues of the utilised KM policy and Thai aspects that relate to the creation of Thai social relationships.

ICTs Utilisation

In the case of ICTs utilisation, alliance members learn by employing ICTs in creating knowledge and communicating with other knowledge encounters (Jasimuddin *et al*, 2005). The learning happens from the functions of facilitation of ICTs in producing explicit knowledge and increasing reach and richness of knowledge flow. Besides, the evidence indicates the occurrences of ICTs utilisations in hoarding knowledge. From the findings, the ways to utilise ICTs in learning within alliance networks are

critical to the emerged patterns of AKS (Maguire and Redman, 2007 and Smoliar, 2003; Davenport, 1994). It is because the issues of ICTs utilisation relate to other dynamics of AKM such as organisational knowledge creation, the relationship in alliance networks and the satisfaction on the reciprocal benefits.

Individuals' Knowledge Sharing Activities

The evidence indicates characteristics of the learning within alliances include the issues of knowledge sharing activity of the individuals. The ways individuals learn and that which makes the learning happen, including job-task roles, cognition, learner's ground knowledge and perception, association, and interaction processes are important for organisational learning and new knowledge creation (Senge, 2006; Arnold et al, 2005; Kamoche, 1997).

The evidence from the investigation explains AKM as a management that mainly integrates with the process of reinforcing the individuals to create inter-organisational knowledge, the utilisation of ICTs in facilitating knowledge flow, the organisation of alliance learning, managing relationships in alliance networks, and controlling as well as reacting with alliance learning environments. Moreover, AKM should fundamentally concern knowledge benefits from AKM that promote alliance network competitive advantage as much as alliance partners' performance developments (Grant and Baden-Fuller, 2004).

The Characteristics of Learning within Alliances

The expressed knowledge sharing and learning behaviours in alliance according to the research results are positively occurred under the agreement boundary and friendly associations (Inkpen, 1998). In alliance networks, the encounters learn from, learn about and learn together with partners for the sake of alliance networks as well as of their organisations (Das and Kumar, 2007; Dussauge *et al*, 2000). However, internal sharing and learning processes of representatives from collaborative partners can be in both positive and negative forms for AKS according to individual internal learning capacity and values (intrinsic and extrinsic), tensions in alliance networks, the range of targeted competitors between the partners (such as overlap routes, the same group of the targeted passengers), and capabilities of alliance leaders to motivate and support the sharing of knowledge (Cook and cook, 2005; Das, 2005; Khanna *et al*, 1998; Werther, 1998).

In practice, strategies in managing knowledge are the conditions to control knowledge sharing activities. The dynamics and the targets of knowledge actions (such as individuals' performance improvement, alliance and organisation competitive advantages) are the sources and the influences for creating efficient knowledge policy. The study suggests that other than the suitable KM policy (explicit behaviour frame) and the understanding on natures of individual learning (intrinsic and extrinsic types VS classical and operant conditionings), the efficient management of the identified dynamics can predominate the ways to maximise learning opportunities as well as strengthen competitive synergies (Huczynski and Buchanan, 2006; Mckenna, 2006; Child *et al*, 2005).

In conclusion, this study proposes the dynamics in AKM, their roles, and relationships between them as the critical phenomena that managers and executives must prioritise in supporting knowledge sharing as well as in strategising the ways to manage knowledge in order to increase benefits from resource utilisation at the maximum potential for the success of alliance network, partner organisations, and individuals.

8.3 Contribution of the Study

This section brings to a conclusion of the doctoral study in terms of the research contribution. The contributions have been made to the areas of the management of knowledge sharing in alliance networks and learning where the research outcomes present the apex of the whole study on characteristics of learning within alliances (characteristics of the AKM dynamics, their roles in knowledge system, and the relationships between the identified dynamics), the structures of airline alliance knowledge flow in Thailand, and the contrast between intra and inter-organisational learning. Ultimately, the distinctiveness and originality from the empirical investigation of this research project are the sources of the contribution to knowledge. As initially presented in terms of research distinctiveness in Chapter 1 and the originality which concluded in section 8.2, the contribution of the study in this section reports in more detail on the issues of the theoretical connections in the literature review, methodology, the investigation outputs, and framework developments.

- The critical characteristics of this research are also established in the ideas and the ways to organise, relate, and present theories in correspondence with the

investigation themes. These contribute to the knowledge in terms of the identified connections between the existing theories and the derived contents as the theoretical background for the investigation.

- By embracing a multi-method research strategy, the specific ways in triangulating qualitative data via quantitative method (counting in order to group nodes of the interview contexts) and quantitative data via a qualitative method in understanding the statistical outcomes are also the important to this study. It provides another characteristic of engaging with multi-method research strategy. Furthermore, in terms of the relation between research philosophy, methodology, and method, this study proposes the arrangement of research philosophical terms into the two main continuums (see Table 3-1). This configuration helps in mapping the utilised research methodology from ontology, epistemology, methodology, to method.

- This study extends the theoretical concept of AKM from identifying dynamics of alliance knowledge sharing (*what*), their roles (*what and how*), and the relationship between the dynamics (*how and why*). The identified dynamics, their roles, and their relationships are in the following areas:

  1). Alliance learning conditions (such as satisfaction, synergies, relationship formats).

  2). The features of knowledge sharing inputs and outputs (such as the interactions between individuals and the natures of knowledge material creations).

3). Knowledge processes (such as creating organisational knowledge, knowledge hoarding practices, and interactions between knowledge sharing factors).

4). Knowledge sharing environments (such as learning relating values, created environments from the utilised leadership styles, and structure of knowledge flow).

- The distinct issues that were originally derived from this research are concerning knowledge management application levels in the airline industry, synergies in learning perspectives, the association with willingness in the sharing of knowledge, the influences of Thai social relationships and values (such as seniority, face saving, and consideration) in knowledge sharing, the relations between leadership styles and types of subordinates, and the control of alliance knowledge sharing control systems.

- The developed frameworks are the critical contribution of this doctoral study. These frameworks provide the distinct contents that are not identified in the literature. The developed frameworks are:

  1). The characteristics of learning within alliances (the twin loops) (See section 7.2).

  2). The structures of airline alliance knowledge flow in Thailand (as identified in section 7.3).

  3). The contrast between intra and inter-organisational learning (as discussed in section 7.4).

8.4 Implications

The implications from this study are basically under two main perspectives as the implications for the knowledge in the KM subject and the implications for airlines. The implications under these perspectives are in the following respects:

- The implications from this doctoral study for knowledge of the KM subject can be in terms of the linkages between AKM principles (presented in chapter 2), the identified dynamics, natures of the AKM dynamics identified, and the configurations on the characteristics of alliance learning. Then, the identified natures of AKM suggest the critical features of the components in KM and the environments in AKS such as the effects from alliance knowledge policy (e.g. reinforcement and punishment towards extrinsic learner), degrees of collectivism and individualism in supporting knowledge flow within alliance networks, and interrelation of learning and operative synergies in transferring knowledge in the networks.

- As for the implications for airlines, the results from the study can directly benefit airline alliance networks and airlines in alliances. In the cases of existing airline alliance networks and collaborative airlines, the issues derived such as group social frameworks, characteristics of other groups, and tensions will offer them reasons to co-consider their current status in a knowledge based perspective and for their further development in a knowledge management system.

- The implications of this study are also for stand alone airlines. The facts presented on the trends in the industry, benefits and characteristics of collaboration in networks are expected to help them in deciding whether or not to affiliate in an alliance network, which alliance network is the most suitable for their requirements and status, and what would affect their competitive edges on their choices.

- The configuration of airline alliance knowledge flow in Thailand offers insight on the features of airlines' local collaboration in Thailand. This could be utilised in a further study on other aspects of the strategic KM and airline management of the industry in Thailand.

- The outcomes of this doctoral study can be utilised in other industries in service sectors based on the similar aspects of individuals' capability dependent in processing services and natures of knowledge creation as well as collaborative dimensions. Furthermore, characteristics of AKM are expected to benefit other researchers in further developing KM frameworks in other industries regarding service businesses. These include types of relationships between partners in alliance operations, the configured AKS, the focus knowledge conversion processes regarding the control of knowledge interaction, the practices of ICTs utilisation in hording knowledge, and alliance knowledge sharing facilitation.

8.5 Limitations

The implications in the former section as well as the further study from this research which will be presented in the next section should be based on the realisation of some limitations. The limitations of this study are indicated below:

- Notwithstanding the focus on the involvement of individuals and some characteristics of their internal driving force in learning, the investigation process is not based on psychological testing. In the stages of the data analysis, the characteristics of individual learning are the co-principles to understand the issues regarding the dynamics in AKM.

- The analysis and the developed frameworks are based on the case of the airline industry. Different industries are challenged by different conditions, patterns, and circumstances which might force dynamics in managing knowledge to be more or less in some cases. While the study on KM can be more accurate when it focuses on a specific industry, the adoptees should realise this fact and the differences they might experience. Although in some extents, the outcomes can be adapted to other cases, in other situations, the application should be considered on the specific case of the airline industry.

- The majority of research participants are Thai. In Phase 1 and 3, most of the interviews were done in Thai and the data was translated into English for the research process. Hereby, to utilise the outcomes of this study, although the researcher used research techniques to check and reaffirm the understanding

on the interview contents between the researcher and the participants, the possibility of bias from the translation must be considered.

In spite of the above limitations, the researcher believes that this doctoral study adds value to the subject of alliance knowledge management and provides sufficient insight for utilising the research outcomes in future studies in the areas of this subject.

8.6 Further Research

The amount of knowledge management study at intra-organisational level is much larger than the study on the issues of the inter-organisational context. Moreover, social and cognitive factors in the knowledge management subject have not reached their saturation in the second generation of knowledge management research which turns to the criticality of individuals and social contexts in managing knowledge in organisation (Grieves *et al*, 2006). According to the results from this research project, the author suggests that there are many issues regarding AKM for further research.

This study defines the characteristics of dynamics in managing knowledge in alliance networks and provides conceptual frameworks to explain knowledge sharing behaviours and environments of the alliance knowledge system. Thus, the further research can be set by utilising the outcomes of this study to focus on:

- ***The Control of Knowledge Flow Facilitation and Inhibition in Alliance Networks***: The identified dynamics in AKM embrace aspects of knowledge

facilitation and inhibition in organisation. In the airline industry, as airlines alliance informally adopt the KM concept in their collaborative activities, the control on knowledge flow facilitation and inhibition is informally incurred beside collaborative management. At this point, the study on systematic control of knowledge flow facilitation and inhibition in knowledge-centric organisation would provide the additional perspective and could indicate the different impacts in controlling knowledge sharing between levels of KM adoptation.

- ***Trust based Relationship Management in AKS***: According to this study, notwithstanding on the alliance agreements, relationship is another powerful source of knowledge sharing filter. The findings on satisfaction in reciprocal benefits, individuals' knowledge sharing activities, and leadership styles integrate with some characteristics of trust. However, the evidences just indicate the existence of trust. It needs further study to focus on the issues and characteristics of trust. Hereby, the research to focus on trust based relationship management in AKS would add the understanding on the less tangible factors in managing knowledge.

- ***The Influences of National Culture on Knowledge Behaviours between Organisations***: Further study focussing on cultural differences and the influences on knowledge behaviours in global collaboration would extend the understanding of KM in different cultures. The cohesion of other research in several different cultures or the study of various cultures in the same research would benefit the additional knowledge in international AKM.

- ***Psychological Issues in AKM***: The investigation indicates the influences of psychological issues in learning and sharing knowledge. Albeit some conclusions on the dynamics in AKM are related to individuals which are inseparable from the issues of the mind and internal thinking processes, the focus is not on the psychological side of KM. The in-depth study of psychological issues regarding KM would increase the understanding on individual psychological complexity in learning and sharing knowledge in organisation.

- ***The Efficiency of ICTs Utilisation in Alliance Knowledge Interaction Management***: The issues which have arisen on ICTs and their effects in AKM on the way individuals employ them in transferring knowledge require more study in terms of interaction management, both in technical and strategic terms. This would increase the understanding on compatibility and effectiveness of knowledge flow between collaborative partners.

- ***The Study on AKM in Other Industries***: From the study on the dynamics of AKM in the airline industry, it is interesting that the study on AKM in other industries and other sectors would provide either the reaffirmation or different outcomes on issues based on similar factors or distinctive aspects that each industry engages with. In fact, to draw a larger scope which links the outcomes of AKM research from many industries, the conclusion from the cohesion on AKM between industries will propose more generalised theories on AKM.

References

90 Years Thailand Ministry of Transport (2002), Kuruspaladprow Publisher, Bangkok.

Agusdinata, B. and Klein, W. (2002) The dynamics of airline alliances. *Journal of Air Transport Management*. Vol. 8, Issue 4, 201-211.

Airport of Thailand's Annual Report, 2002

Airport of Thailand's Annual Report, 2003

Airport of Thailand's Annual Report, 2004

Airport of Thailand's Annual Report, 2005

Airport of Thailand's Annual Report, 2006

Airport of Thailand's Annual Report, 2007

Airport Thai (2007a) *Suvarnabhumi airport beyond pride*. September, Vol. 1, No.12, 19-21.

Airport Thai (2007b) *Suvarnabhumi and its airport management with AIMS technology*. September, Vol. 1, No.12, 22-23.

Air-Sea Guide, 2008, Vol.20, Febuary.

Ajzen, I. (1991) The theory of planned behaviour. *Organisational Behaviour and Human Decision Processes*. Vol. 50, No.2, 179-211.

Al-Hawamdeh, S. (2003) *Knowledge management: cultivating knowledge professionals*. Chandos Publishing.

Alejandro, E. and Jose Anastasio, U. (2002) An Analysis of Co-operative Agreements from a Knowledge – based Perspective: An Integrative Conceptual Framework. *Journal of Knowledge Management*, Vol. 6, No. 4, 330-346.

Ali, A., Lee, M., Hsieh, Y., and Krishnan, K. (2005) Individualism and collectivism in Taiwan. *Cross Cultural Management: An International Journal*. Vol. 12, No. 4, 3-16.

AOT's Statistical Reports, 2006

Argyris, C. (1976) Single Loop and Double Loop Models in Research on Decision Making. *Administrative Science Quarterly*. Vol. 21, September, 363-377.

Argyris, C. (1977a) Organisational Learning and Management Information Systems. *Accounting, Organisations and Society*, Vol. 2, No. 2, 111-123.

Argyris, C. (1977b) Doubble Loop Learning in Organisations. *Harvard Business Review*. September-October, 115-125.

Argyris, C. (1993) *Knowledge for action: a guide to overcoming barriers to organisational change*. Jossey Bass.

Argyris, C. (2001) *On organisational learning*. 2nd edition, reprinted, Blackwell Business.

Argyris, C. and Schon, D. (1996) *Organisational Learning II. Theory, Method, and Practice*. Addison-Wesley Publishing Company.

Arnold, J. Cooper, C., and Robertdon, I. (2005) *Work psychology: understanding human behaviour in the workplace*. 4th edition. Financial Times Pitman Publishing.

Atkinson, R., Atkinson, R, Smith, E., and Hilgard, E. (1996) *Introduction to psychology*. 12th edition, Harcourt Brace Jovanovich College Publishers.

Bailey, C. and Clarke, M. (2001) Managing knowledge for personal and organisation benefit. *Journal of Knowledge Management*. Vol. 5, No. 1, 58-67.

Balfour, J. (2004) EC competition law and airline alliances. *Journal of Air Transport Management*. Vol. 10, Issue 1, 81-85.

Bamford, J., Gomes-Casseres, B., and Robinson, M. (2003) *Mastering alliance strategy: a comprehensive guide to design, management, and organisation*. Jossey Bass Wiley.

Banton, R., Clifford, P. Frosh, S., Lousada, J., and Rosenthall, J. (1985) *The Politics of Mental Health*. Macmillan.

Barber, C. (1998) *CRS Information and Competitive Advantage in the Airline Industry*. Ph. D. Thesis. University of Northumbria at Newcastle.

Barney, J (1991) Firm resources and sustained competitive advantage, *Journal of Management*, Vol. 17, 99-120.

Bazeley, P. (2004) Issues in mixing qualitative and quantitative approaches to research. In Buber, R., Gadner, J., and Richards, L. (eds.) *Applying qualitative methods to marketing management research*. Palgrave Macmillan.

Becker, E. (1962) *The birth and death of meaning*. Free Press.

Berger, P. and Luckmann, T. (1971) *The social construction of reality: a treatise in the sociology of Knowledge*. Penguin.

Beyhoff, S. (1995) Code-sharing: a summary of the German study. *Journal of Air Transport Management*. Vol. 2, No. 2, 127-129.

Bhatt, G. (1998) Managing knowledge through people. *Knowledge and Process Management*. Vol. 5, No.3, 165-171.

Bhatt, G. (2001) Knowledge management in organisations: examining the interaction between technologies, techniques, and people. *Journal of Knowledge Management*. Vol. 5, No.1, 68-75.

Bhatt, G. (2002) Management strategies for individual knowledge and organisational knowledge. *Journal of Knowledge Management*. Vol.6, No.1, 31-39.

Black, T. (1999) *Doing quantitative research in the social sciences: An integrated approach*. Sage.

Bleeke, J. and Ernst, D. (1995) Is your strategic alliance really a scale? *Harvard Business Review*. Vol. 73, January, 97-105.

Bloisi, W., Cook, C., and Hunsaker, P. (2003) *Management and organisational behaviour*. European edition, McGraw-Hill.

Blumer, H. (1969) *Symbolic interactionism*. Prentice-Hall.

Bond, M., Leung, K., and Wan, K. (1982) How does cultural collectivism operate? *Journal of Cross-Cultural Psychology*. Vol. 13, No. 2, June, 186-201.

Bontis, N., Crossan, M., and Hulland, J. (2002) Managing an organisational learning system by aligning stocks and flows. *Journal of Management Studies*. Vol. 39, No. 4, 437-469.

Button, K., Hayness, K., and Stough, R., (1998), *Flying into the future: air transport policy in the european union*. Edward Elgar.

Borys, B. and Jemison, D. (1989) Hybrid arrangements as strategic alliances: theoretical issues in organisational combinations. Academy of Management Review. Vol. 14, 234-249.

Boyd, C. (2001) HRM in the airline industry: strategies and outcomes. *Personnel Review*. Vol. 30, No. 4, 438-453.

Brown, J. and Duguid, P. (1998) Organising knowledge. *California Management Review*. Vol. 40, No. 3, 90-111.

Brueckner, J. (2003) The benefits of codesharing and antitrust immunity for international passengers, with an application to the Star Alliance. *Journal of Air Transport Management*. Vol. 9, Issue 2, 83-89.

Bryman, A. (1988) *Quantity and quality in social research*. Unwin Hyman.

Bryman, A. (2001) *Social research methods*. Oxford University Press.

Bryman, A. (2004) *Social research methods*. 2nd edition. Oxford University Press.

Bryman, A. and Bell, E. (2007) Buasiness research methods. 2nd edition. Oxford University Press.

Bryman, A. and Cramer, D. (1997) *Quantitative data analysis with SPSS for Windows*. Routledge.

Bunjoungmanee, P. (2001) *Criticals of Thai Airways' Membership in Star Alliance*. Masters' Dissertation University of Northumbria.

Burns, T. (1992) *Erving Goffman*. Routledge.

Burr, V. (1997) *Social Constructionism and Psychology*. The New Psychologist, OUPS, Milton Keynes.

Burr, V. (1999) Realism, relativism, social constructionism and discourse. in Parker, I. (eds.) *Social Constructionism, Discourse and Realism*. London: Sage.

Burrell, G. and Morgan, G. (2003) *Sociological paradigms and organisational analysis*. Reprinted, Athenaeum Press.

Cabri, G., Ferrari, L., and Leonado, L. (2004) Rethinking agent roles: extending the role definition in the BRAIN framework. *Man and Cybertics: IEEE International Conference*. October, Vol. 6, 5455-5460.

Campos, E. and Sanchez, P. (2003) Knowledge Management in the emerging strategic business process: information, complexity, and imagination. *Journal of Knowledge Management*. Vol. 7, No. 2, 5-17.

Cavusgil, T. et al (2003) Tacit Knowledge Transfer and Firm innovation capability. *Journal of Business & Industrial Marketing*. Vol. 18, No. 1, 6-11.

Chan, D. (2000) The development of the airline industry from 1978 to 1998. *Journal of Management Development*. Vol. 19, No. 6, 489-514.

Chanpayom, B. (2003) The airline business: global airline alliances. *Journal of Business Administration*. Thamasart University, Issue 97, January-March, 41-60.

Charon, J. (1992) *Symbolic interactionism: an introduction, an interpretation, an integration*. 4th edition, Prentice Hall.

Chatterjee, S. (2007) Why synergy is so difficult in mergers of related businesses? *Strategy & Leadership*. Vol. 35, No.2, 46-52.

Child, J. and Faulkner, D. (1998) *Strategies of co-operation, Managing Alliances, Networks, and Joint Ventures*. Oxford.

Child, J., Faulkner, D., and Tallman, S. (2005) *Cooperative Strategy: managing alliances, networks, and joint ventures*. 2nd edition. Oxford University Press.

Chrislip, D., Larson, C., and Parr, J. (1994) *Collaborative leadership*. Jossey-Bass Publishers.

Chua, A. (2003) Knowledge sharing: a game people play. *Aslib Proceedings*. Vol. 55, Issue 3, 117-129.

Cimon, Y. (2004) Knowledge-related asymmetries in strategic alliances. *Journal of Knowledge Management*. Vol. 8, No. 3, 17-30.

Cohen, D. and Prusak, L. (2001) *In good company; how social capital makes organisations work*. Harvard Business School Press.

Collins, T. and Doorley, T. (1991) *Teaming up for the 90's homewood*. Irwin.

Conger, J. (1988) The empowerment process: integrating theory and practice. *Academy of Management Review*. Vol. 13, No. 3. 471-482.

Connell, J. and Voola, R. (2007) Strategic alliances and knowledge sharing: synergies or silos? *Journal of Knowledge Management*. Vol. 11, No. 3, 52-66.

Constructing Excellence (2004) *Demystifying knowledge management: a best practice guide for the construction industry*. First Published, March. Constructing Excellence Limited.

Contractor, F. and Lorange, P. (1988) *Why Should Firms Cooperate*? Lexington Books.

Cook, J. and Cook, L. (2005) Promoting organisational knowledge sharing In Montano, B. (eds.) *Innovations of Knowledge Management*. IRM Press. 301-321.

Cook, T. and Reichardt, C. (1979) *Qualitative and quantitative methods in evaluation research*. CA: Sage.

Costello, G. (1996) *Knowledge Management in strategic Alliances : The Role of Information Technology*. Ph., D. Thesis, University of Oxford.

Cramer, D. (1998), *Fundamental Statistics for Social Research*. Routledge.

Cravens, D., Piercy, N., and Shipp, S. (1996) New organisational forms for competing in highly dynamic environments: the network paradigm. *British Journal of Management*. Vol. 7, Issue 3, 203-218.

Creswell, J., (1994), *Research design: qualitative and quantitative approaches*. Sage Publications.

Crotty, M., (1998), *The foundations of social research*. Sage Publications.

Culpan, R. (2002) *Global business alliances*. Quorum Books.

Dallmayr, F. (1997) The politics of non-identity: Adorno, postmodernism and Edward said. *Politic Theory*. Vol. 25, No. 1, 33-56.

Das, T. (2005) Deceitful behaviours of alliance partners: potential and prevention. *Management Decision*. Vol. 43, No.5, 706-719.

Das, T. and Kumar, R. (2007) Learning dynamics in the alliance development process. *Management Decision*. Vol. 45, No. 4, 684-707.

Davenport, T. (1994) Saving IT's soul: human-centered information management. *Harvard Business Review*. Vol.72, No.2, 199-131.

Davenport, T. and Prusak, L (1998), *Working Knowledge: How Organisations Manage What They Know*, Harvard Business School Press.

Davenport, T. and Prusak, L. (2000) *Working Knowledge: How organizations manage what they know*. Harvard Business School Press.

Decrop, A. (1999) Triangulation in qualitative tourism research. *Tourism Management*. Vol. 20, No. 1, 157-161.

De Long, D. and Fahey, L. (2000) Diagnosing cultural barrieres to knowledge management. *Academy of Management Executive*. Vol. 14, No.4, 113-27.

De Man, A. (2002) *The State of Alliance Management: special ASAP report of research into alliance capability*, Association of Strategic Alliance Professional.

Denning, S. (2001) *The springboard: how story telling ignites action in knowledge-era organisations*. Butterworth-Heineman.

Denzin, N. (1978) *The research act*. 2nd edition, McGraw Hill.

Denzin, N. (1989) *The research act*. 3rd edition, McGraw Hill.

Denzin, N. (2001) *Interpretive Interactionism*. 2nd edition, Sage Publications.

Derrida, J. (1993) *Speech and phenomena, and other essays on Husserl's theory of signs*. Northwestern University Press.

Desouza, K. and Awazu, Y. (2006) Knowledge management at SMEs: five peculiarities. *Journal of Knowledge Management*. Vol. 10, No. 1, 32-43.

De-Wit, B. and Meyer, R. (1994) *Strategy; Process, content, context; An International Perspective*. West Publishing Company.

Dews, P. (1987) *Logics of Disintegration: post-structuralist tought and the claims of critical theory*. Verso London.

Diaz-Guerrero, R. (1984) The psychological study of the Mexican. In Martinex, J. and Mendoza, R., *Chicano psychology*. 2nd edition, Orlando: Academic Press.

Divitini, M., Omodei Sale', G., Pozzoli, A. and Simone, C. (1993) Supporting the dynamics of knowledge sharing within organisations. *The Proceedings of Conference on Organisational Computing Systems*. Milpitas, CA. 178-183.

Dixon, N. (2000) *Common Knowledge*. Harvard Business School Press.

Doganis, R. (1998) *Flying off course: the economics of international airlines.* 2nd edition, Routledge.

Doganis, R. (2006) *The airline business*. 2nd edition, Routledge.

Doganis, R. (2001) *The airline business in the 21st century*. Routledge.

Dodgson, M. (1993) Learning, Trust, and Technological Collaboration. *Human Relations*. Vol. 46, 77-95.

Dougherty, V. (1999) Knowledge is about people not databases. *Industrial and Commercial Training*. Vol. 31, No. 7, 262-266.

Doz, Y. (1996) The evolution of cooperative strategic alliance: initial conditions or learning process? *Strategic Management Journal*. Vol. 17, 55-83.

Doz, Y and Hamel, G. (1998) *Alliance advantage: The art of creating value through partnering*. Harvard Business School Press.

Draft, R. (1983) Learning the craft of organisational research. Academy of *Management Review*. Vol. 8, No. 4, 539-546.

Dresner, M., and Windle, R., (1996), Alliances and code-sharing in the international airline industry. *Built Environment*. Vol.22, Issue 3, 201-211.

Dueck, G. (2001) Views of knowledge are human views. *IBM Systems Journal*. Vol. 40, No. 4, 885-888.

Dunford, R. and Jones, D. (2000) Narrative in strategic change. *Human Relations*. Vol. 53, No. 9, 1207-1226.

Dussauge, P. and Gamette, B. (1999) *Cooperative strategy; competing successfully through strategic alliances*. John Wiley & Sons.

Dussauge, P., Garrette, B., and Mitchell, W. (2000) Learning from competing partners: outcomes and durations of scale and link alliances in Europe, North America, and Asia. *Strategic Management Journal*. Vol. 21, No.2, 99-126.

Easterby-Smith, M., Thorpe, R., and Lowe, A., (1991) *Management research*. Sage Publications.

Easterby-Smith, M., Thorpe, R., and Lowe, A., (2002) *Management research.* 2nd ed. Sage Publications.

Escriba-Esteve, A. and Urra-Urbieta, J. (2002) An analysis of co-operative agreements from a knowledge-based perspective: an integrative conceptual framework. *Journal of Knowledge Management.* Vol. 6, No. 4, 330-346.

Evans, N. (2001) Collaborative Strategy: An Analysis of the changing world of international airline alliances. *Tourism Management.* Vol. 22, 229-243.

Fan, T., Vigeant-Langlois, L., Geissler, C., Bosler, B., and Wilmking, J. (2001) Evolution of global airline strategic alliance and consolidation in the twenty-first century. *Journal of Air transport Management.* Vol. 7, Issue 6, 349-360.

Fenwick, J. and Mcmillan, J. (2005) Organisational learning and public sector management: an alternative view. *Public Policy and Administration.* Vol. 20, No.3, Autumn, 42-55.

Firestone, W. (1987) Meaning in method: The rhetoric of quantitative and qualitative research. *Educational Researcher.* Vol. 16, No. 7, 16-21.

Ford, D. and Chan, Y. (2003) Knowledge sharing in a multicultural setting: a case study. *Knowledge Management Research and Practice.* Vol. 1, No. 1, 11-27.

Forhmann, B. (1994) Discourse analysis as a research method in library and information science. *Library and Information Science Research.* Vol. 16, Issue 2, 85-196.

Foster, J. (1998) *Data analysis using SPSS for windows: a beginner's guide.* Thousand Oaks, SAGE.

Foucault, M. (1980) *Power/knowledge: selected interviews and other writings 1972-1977.* Hassocks, Sussex: Harvester.

Fournier, S., Brocarei, D., Devogele, T., and Claramunt, C. (2003) TRANS: a tractable role-based agent prototype for concurrent navigation systems. *Proc. First European Workshop on Multi-Agent System (EUMAS).* December, Oxford.

Furnham, A. (2005) *The psychology of behaviour at work: the individual in the organisation.* 2nd edition. Psychology Press.

Gable, G. (1994) Integrating case study and survey research methods; an example in information systems. *European Journal of Information Systems.* Vol. 3, Issue 2, 112-126.

Gardiner, D. and Chandler, C. (2006) *Research degree handbook.* Graduate School, September, Northumbria University.

Gatley, S. and Lessem, R. (1995) Enhancing the competitive advantage of trans-cultural businesses. *Journal of European Industrial Training*. Vol. 19, No.9, 3-11.

Gergen, K. (1985) *The social constructionist movement in modern psychology.* American Psychologist. Vol. 40, No.3, 266-275.

Gergen, K. (1991) *The saturated self. Newbury Park*, Sage.

Gilbert, D. (1996) Relationship marketing and airline loyalty schemes. *Tourism Management*. Vol. 17, No.8, 575-582.

Gill, R. (1996) Discourse analysis: methodological aspects. In Richardson, J. (eds.) *Handbook of qualitative research methods for psychology and the social sciences.* Leicester: British Psychological Society.

Gill, S. (2000) The tacit dimension of dialogue for knowledge transfer, *Conference Proceedings from the Conference on Knowledge and Innovation.* Helsinki School of Economies and Business Administration.

Gillen, D., Oum, T., and Tretheway, M. (1985) *Airline Cost and Performance: Implications for Public and Industry Policies*. Centre for transportation Studies.

Glaser, B. and Strauss, A. (1967) *The Discovery of ground theory: strategies for qualitative research.* Aldine de Gruyter.

Glisson, M., Cunningham, W., Harris, J., and Lorenzo-Aiss, J. (1996) Airline industry strategic alliances: marketing and policy implications. *International Journal of Physical Distribution & Logistics Management*. Vol. 26, No. 3, 26-34.

Goffman, E. (1967). On facework: an analysis of ritual elements in social interaction', in Jawrski, A.,and Coupland, N. (eds.) *The Discourse Reader*, London, Roterledge, 306-321.

Gong, S. (2007) Bankruptcy protection and stock market behaviour in the US airline industry. *Journal of Air Transport Management*. Vol. 13, Issue 4, 213-220.

Gould, B. (1999) Five organisation types. *The Antidote*. Vol. 4, Issue 1, 21-25.

Goulding, C. (1998) Grounded theory: the missing methodology on the interpretivist agenda. *Qualitative Market Research: An International Journal*. Vol. 1, No. 1, 50-57.

Goulding, C. (2005) Grounded theory, ethnography, and phenomenology. *European Journal of Marketing*. Vol. 39, No 3/4, 294-308.

Grant, R. and Baden-Fuller, C. (2004) A knowledge accessing theory of strategic alliances. *Journal of Management Studies*. Vol. 41, No. 1, 61-84.

Greene, J., Caracelli, V., and Graham, W. (1989) Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*. Vol. 11, No. 3, 255-274.

Grieves, J. (1996) Stories and Fictions as representation of organisational experience. *The 2nd International Conference on Organisational discourse: talk, text, and tropes.* The Management Center, Kings College, University of London. 83-88.

Grieves, J., McMillan, J., Wilding, P. (2006) Barriers to learning: conflicts that occur between and within organizational systems. *International Journal of Learning and Intellectual Capital.* Vol. 3, No. 1, 86-103.

Guba, E. (1992) *The Paradigm Dialog.* Sage Publications.

Gubrium, J. and Holstein, J. (2003) *Analysing interpretive practice.* In Denzin, N. and Lincoln, Y. (eds.) Strategies of qualitative inquiry. 2nd edition, Sage Publications.

Gudmundsson, S. and Lechner, C. (2006) Multilateral airline alliances: balancing strategic constraints and opportunities. *Journal of Air Transport Management.* Vol. 12, Issue 3, 153-158.

Gulati, R. (1995) Social structure and alliance formation patterns: a longitudinal analysis. *Administrative Science Quarterly.* Vol. 40, Issue 4, 619-652.

Hair, J., Barry, B, Arthur, M. and Phillip, S. (2003) *Essentials for Business Research Methods*, Wiley International Edition, Wiley.

Haldin-Herrgard, T. (2000) Difficulties in diffusion of tacit knowledge in organisations. *Journal of Intellectual Capital.* Vol. 1, Issue 4, 357-365.

Hall, B. (2001) Values development and learning organisations. *Journal of Knowledge Management.* Vol. 5, No. 1, 19-32.

Hamel, G. (1991) Competition for Competence and Inter-Partner Learning with International Strategic Alliances. *Strategic, Management Journal*, Vol. 12, Summer, 83-104.

Hamel, G., Doz, Y., and Pahalad, C. K. (1989) Collaborate with Your Competitors and Win. *Harvard Business Review.* January / February, 133-139.

Hamilton, R. and Morrish, S. (2002) Airline alliances-who benefits? *Journal of Air Transport Management.* Vol.8, 401-407.

Hammersley, M. (2003) Conversation analysis and discourse analysis: methods or paradigms? *Discourse and Society.* Vol. 14, No. 6, 751-781.

Hanlon, P. (2000) *Global Airlines.* 2nd ed., Butterworth Heineman.

Hanlon, P. (2007) *Global Airlines.* 3rd ed., Butterworth Heineman.

Hannegan, T. and Mulvey, F. (1995) An analysis of code-sharing's impact on airlines and consumers. *Journal of Air Transport Management.* Vol. 2, No. 2, 131-137.

Harlow, H. (2008) The effect of tacit knowledge on firm performance. *Journal of Knowledge Management*. Vol. 12, No. 8, 148-163.

Harre, R. (1995) Discursive psychology. In Smith, J., Harre, R., and Langenhove, L. (Eds.) *Rethinking psychology*. Thousand Oaks, Sage.

Harvey, R. (2000) *Social Research Methods: Qualitative and Quantitative approaches*. Sage.

Hasgall, A. and Shoham, S. (2008) Knowledge processes: from managing people to managing processes. *Journal of Knowledge Management*. Vol. 12, Issue 1, 51-62.

Henson, M., Nohria, N., and Tierney, T. (1999) What's your strategy for managing knowledge? *Harvard Business Review*. March-April, 106-116.

Herschel, R., Nemati, H., and Steiger, D. (2001) Tacit to explicit knowledge conversion: knowledge exchange protocols. *Journal of Knowledge Management*. Vol. 5, No. 1, 107-116.

Hjorland, B. (2002) Epistemology and the socio-cognitive perspective in information science. *Journal of the American Society for Information Science and Technology*. Vol. 53, No.4, 257-270.

Hoffmann, M., Lenhard, J., and Seeqer, F. (2005) Activity and sign: grounding mathematics education. Springer.

Hofstede, G. (1985) The interaction between national and organisational value systems. *Journal of Management Studies*. Vol. 44, No. 4, July, 347-357.

Hofstede, G. (1993) Cultural constraints in management theories. *Academy of Management Executive*. Vol. 7, No. 1, 81-94.

Hofstede, G., Neuijen, B., Ohayv, D., and Sanders, G. (1990) Measuring organisational cultures: a qualitative and quatitative study across twenty cases. *Administrative Science Quarterly*. Vol. 35, 286-316.

Holsapple, C. (2005) The inseparability of modern knowledge management and computer-based technology. Journal of Knowledge Management. Vol. 9, No.1, 42-52.

Howarth, G. and Kirsebom, T. (2000) *The future of airline alliances*. Gemini Consulting.

Huber, G. (1991) Organisational Learning : The Contributing Processes and the Literatures. *Organisation Science*. Vol. 2, No. 1, 88-115.

Huczynski, A. and Buchanan, D. (2006) *Organisational behaviour*. 6th edition, Prentice Hall/Financial Times.

Hui, C. (1988) Measurement of individualism-collectivism. *Journal of Research on Personality*. Vol. 22, 17-36.

Hyde, K., (2000) Recognising deductive processes in qualitative research. *Qualitative Market Research*. Vol. 3. No. 2. 82-89.

Iatrou, K. and Alamdari, F. (2005) The empirical analysis of the impact of alliances on airline operations. *Journal of Air Transport Management*. Vol. 11, Issue 3, 127-134.

Inkpen, A. (1998) Learning and knowledge acquisition through international strategic alliances. *Academy of Management Executive*. Vol. 12, No. 4, 69-80.

Inkpen, A. (2000) A note on the dynamics of learning alliances; competition, cooperation, and relative scope. *Strategic Management Journal*. Vol, 21, Issue 7, 775-779.

Inkpen, A. and Beamish, P. (1997) Knowledge bargaining power, and the instability of international joint ventures. *Academy of Management Review*. Vol. 22, No.1, 177-202.

Iatrou, K. and Alamdari, F. (2005) The empirical analysis of the impact of alliances on airline operations. *Journal of Air Transport Management*. Vol. 11, Issue 3, 127-134.

Jasimuddin, S., Klein, J., and Connell, C. (2005) The paradox of using tacit and explicit knowledge: strategies to face dilemmas. *Management Decision*. Vol. 43, No. 1, 102-112.

Johnson, J. (1998) Embracing change: a leadership model for the learning organisation. *International Journal of Training & Development*. Vol. 2, No. 2, 141-150.

Johnson, G. (1988) Rethinking Incrementalism, *Strategic Management Journal*. Vol. 9, 75-91.

Jones, E., Chonko, L., and Roberts, J. (2003) Creating a partnership-oriented, knowledge creation culture in strategic saled alliances: a conceptual framework. *Journal of Business & Industrial Marketing*. Vol. 18, No. 4/5, 336-352.

Kale, P., Singh, H, and Perlmutter, H. (2000) Learning and protection of proprietary assets in strategic alliances: building relational capital. Strategic Management Journal. Vol. 21, No. 3, 217-237.

Kamoche, K. (1997) Knowledge creation and learning in international human resource management. *International Journal of Human Resource Management*. Vol. 8, No. 3, April, 213-225.

Kenny, A. (1984) *The oxford illustrated history of western philosophy*. Oxford University Press.

Khamseh, H. and Jolly, D. (2008) Knowledge transfer in alliances: determinant factors. *Journal of Knowledge Management*. Vol. 12, No. 1, 37-50.

Khanna, T. (1998) The scope of alliances. *Organization Science*. Vol. 9, No. 3, 340-355.

Khanna, T., Gulati, R., and Nohria, N. (1998) The dynamics of learning alliances; competition, cooperation, and relative scope. *Strategic Management Journal*. Vol, 19, Issue 3, 193-210.

Kim, Y., Yu, S., and Lee, J. (2003) Knowledge strategy planning: methodology and case. *Expert System with Applications*. Vol. 24, Issue 3, 295-307.

Kirk, J. and Miller, M. (1986) *Reliability and validity in qualitative research.* Qualitative research methods series 1, Sage Publications.

Klein, J. (2008). Some directions for research in knowledge sharing. *Knowledge Management Research & Practice*, Vol. 6, 41-46.

Kleymann, B. (2005) The dynamics of multilatereal allying: a process perspective on airline alliances. *Journal of Air Transport Management*. Vol. 11, Issue 3, 135-147.

Kleymann, B. and Seristo, H. (2004) *Managing strategic airline alliances*. Ashgate.

Knorr, A. and Arndt, A. (2004) Alliance strategy and the fall of Swissair: a comment. *Journal of Air Transport Management*, Vol. 10, Issue 2, 119-123.

Koch, C. (2002) The emergence of second generation knowledge management in Engineering consulting. *International Council for Research and Innovation in Building and Construction Conference*. Aarhas School of Architecture. 12-14 June. 1-8.

Kogut, B. (1988) Joint Ventures: Theoretical and Empirical Perspectives. *Strategic Management Journal*, Vol.9, 319-322.

Kogut, B. and Zander, V. (1992) Knowledge of the firm and evolutionary theory of multinational corporation. *Organisation Science*. 3.

Kolosz, W. (2006) *The impact and role of knowledge in the context of small and medium size enterprises*. Ph.,D. Dissertation. University of Northumbria.

Komin, S. (1978) Some empirical evidence of Thai value and personality. *The Thai Journal of Development Administration*. Vol. 3, 271-292.

Komin, S. (1990) Culture and work-related values in Thai organisations. *International Journal of Psychology*. Vol., 25, 681-704.

Komin, S. (1999) The Thai concept of effective leadership. In Kao, H, Sinha, D., and Wilpert, B. (eds.) *Management and managerial values: the indigenisation of organisations in Asia*. Second printing, Sage Publications.

Komin, S. and Smucdkarn, S. (1979) *Thai value systems: a measurement instrument.* National Institudte of Development Administration. Bangkok.

Kreiner, K. (2002) Tacit knowledge management: the role of artifacts. *Journal of Knowledge Management*. Vol. 6, Issue 2, 112-123.

Kritzer, H. (1996) The data puzzle: the nature of interpretation in quantitative research. *American Journal of Political Science*, Vol. 40, No. 1, 1-32.

Lajara, B., Lillo, F., and Sempere, V. (2003) Human resources management: a success and failure factor in strategic alliances. *Employee Relations*. Vol. 25, No. 1, 61-80.

Lang, J. (2001) Managerial concerns in knowledge management. *Journal of Knowledge Management*. Vol. 5, No.1, 43-57.

Larsson, R., Bengtsson, L., Henriksson, K., and Sparks, J. (1998) The interorganisational learning dilemma: collective knowledge development in strategic alliances. *Organisation Science*. Vol. 9, No. 3, May-June, 285-305.

Lauer, R. and Handel, W. (1977) *Social psychology: the theory and application of symbolic interactionism*. Houghton Mifflin Company.

Layder, D. (1998) *Sociological practice: linking theory and social research.* Sage Publications.

Lendrum, T. (2000) *The strategic partnering handbook: the practitioner's guide to partnerships and alliances*. 3rd edition, McGraw-Hill Australia.

Lewin, K., Lippitt, R., and White, R. (1939) Patterns of aggressive behaviour in experimentally created "social climates". *The Journal of Social Psychology*. Vol. 10, 271-299.

Lei, D. (1993) Offensive and defensive uses of alliances. *Long Range Planning*. Vol. 26, No.4, 32-41.

Li, M. and Gao, F. (2003) Why Nonaka highlights tacit knowledge: a critical review. *Journal of Knowledge Management*. Vol. 7, No. 4, 6-14.

Lilavivat, T. (2005) *Impact of low-cost carriers' entry in Thailand.* Master's degree thesis. The School of Civil Engineering, Asian Institute of Technology.

Lin, C., Yeh, J., and Tseng, S. (2005) Case study on knowledge management gaps. Journal of Knowledge Management. Vol. 9, No. 3, 36-50.

Linnarsson, H. and Werr, A. (2004) Overcoming the innovation- alliance paradox: a case study of an explorative alliance. *European Journal of Innovation Management.* Vol. 7, Issue.1, 45 -55.

Lincoln, Y. (1985) *Organisational theory and inquiry: the paradigm revolution.* Sage.

Lincoln, Y. and Guba, E. (1985) *Naturalistic Inquiry.* Sage.

Lorange, P. and Roos, J. (1993) *Strategic alliances; Formation, implementation, and evolution.* Blackwell.

Maguire, S. and Redman, T. (2007) The role of human resource management in information system development. *Management Decision.* Vol. 45, No. 2, 252-264.

Marchand, D., Davenport, T., and Dickson, T. (2000) *Mastering Information Management.* Financial Times. Prentice Hall.

Marchand, S. (2000) *Star Alliance, 2000.* Brandeis University.

Markus, H. and Kitayama, S. (1991) Culture and the self: implications for cognition, emotion, and motivation. *Psychological Review.* Vol. 98, No. 2, 224-253.

Marwick, A. (2001) Knowledge management Technology. *IBM System Journal.* Vol. 40, No. 4, 814-830.

Mayer, M., Wodak, R., and Jenner, B. (2000) *Methods of text and discourse analysis.* Sage.

McCracken, G. (1988) *The Long Interview.* Sage Publications.

McDermott, R. and O'Dell, C. (2001) Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management.* Vol.5, No. 1, 76-85.

McKenna, E. (2006) *Business psychology and organizational Behaviour.* 4th edition, Psychology Press.

Mekvichai, P. (1999) *A comparison study of the operations of Thai Airways International Public Company Limited with Asia-Pacific Airlines by financial analysis.* Master's Degree dissertation. Kasetsart University.

Mentzas, G., Apostolou, D. Young, R., and Abecker, A. (2001) Knowledge networking: a holistic solution for leveraging corporate knowledge. *Journal of Knowledge Management.* Vol. 5, No. 1, 94-106.

Miles, M. and Huberman, A. (1994) *Qualitative data analysis: a sourcebook of new methods.* 2nd edition. Sage.

Mintzberg, H. (1983) *Structure in fives: designing effective organisations.* Prentic-Hall.

Mintzberg, H., Lampel, J, Quinn, J., and Ghoshal, S. (2003) *The Strategy Process: Concepts, Contexts, Cases*. 4th edition, Pearson Education.

Moeller, K. and Svahn, S. (2004) Crossing East-West boundaries: knowledge sharing in intellectual business networks. *Industrial Marketing Management*. Vol. 33, No.3, 219-228.

Morgan, G. (2001) *SPSS for windows: an introduction to use and interpretation to research*. Lawrence Erlbaum Associates.

Morgan, G. and Smircich, L (1980) The Case for Qualitative Research. *Academy of Management Review*. Vol. 5, 491-500

Morrish, S. and Hamilton, R. (2002) Airline Alliance-Who Benefits? *Journal of Air Transport Management*. Vol. 8, 401-407.

Morrison, M. and Mezentseff, L. (1997) Learning alliances: a new dimension of strategic alliances. *Management Decision*. Vol. 35, No. 5. 351-357.

Napetapat, R. (1999) *Rules of the air and air traffic control service*. Natikul Printing.

Narapong, S. (2001) *The competitive advantages analysis of Thai Airways International to Singapore Airlines and Malaysia Airlines*. Master's Degree dissertation. Kasetsart University.

Nielsen, B. (2002) Synergies in strategic alliances: motivation and outcomes of complementary and synergistic knowledge networks. *Journal of Knowledge Management Practice*, Vol. 3, October.

Nielsen, B. (2005) The role of knowledge embeddedness in the creation of synergies in strategic alliances. *Journal of Business Research*. Vol. 58, Issue 9, 1194-1204.

Nickols, F. (2000) The Knowledge in Knowledge Management. *in* J.W. Cortada, J. and Woods, J. eds. *The Knowledge Management Yearbook 2001-2002*. Butterworth-Heinemann.

Nonaka, I. (1991) The Knowledge Creating Company. *Harvard Business Review*. November-December, 96-104.

Nonaka, I. (1994) The dynamic theory of organisational knowledge creation. *Organisation Science*. Vol.5, No. 1, Feb. 14-37.

Nonaka, I. and Takeuchi, H. (1995) *The Knowledge creating company*. Oxford University.

Nonaka, I. and Teece, D. (2001) *Managing Industrial Knowledge*. Sage Publications.

Nonaka, I., Toyama, R., and Konno, N. (2000) SECI, ba and leadership: A unified model of dynamic knowledge creation. *Long Range Planning*. Vol.33, No. 1, 5-34.

Northwest's Annual Report 1994

Noypayak, W. and Speece, M. (1998) Tactics to influence subordinates among Thai Managers. *Journal of Managerial Psychology.* Vol. 13, Issue 5/6, 343-358.

Nunes, N., Farago, S., and Travis, J. (1997) The economic impact of international airline alliances. Commonwealth of Australia.

Nurmi, R. (1996) Teamwork and team leadership. Team Performance Management; An International Journal. Vol. 2, No. 1, 9-13.

O'Leary, Z. (2004) *The essential guide to doing research.* Sage Publications.

Oppemheim, A. (1999) *Questionnaire design: interviewing and attitude measurement.* Continuum International Publishing Group.

Ordonez de Pablos, P. (2004) Knowledge flow transfers in multinational corporations: knowledge properties and implications for management. *Journal of Knowledge Management.* Vol. 8, No. 6, 105-116.

Oum, T. and Park, J. (1997) Airline alliances: current status, policy issues, and future directions. *Journal of Air Transport Management.* Vol. 3, No.3, 133-144.

Oum, T., Park, J., and Zhang, A. (2000). *Globalisation and Strategic Alliances: The Case of the Airline Industry.* Pergamon.

Oum, T., Yu, C., and Zhang, A. (2001) Global airline alliances: international regulatory issues. *Journal of Air Transport Management.* Vol. 7, Issue 1, 57-62.

Oum, T. and Zhang, A. (2001) Key aspects of global strategic alliances and the impacts on the future of Canadian airline industry. *Journal of Air Transport Management.* Vol, 7. Issue 5, 287-301.

Pansiri, J. (2005) The influence of managers' characteristics and perceptions in strategic alliance practice. *Management Decision.* Vol. 43, No. 9, 1097-1113.

Parise, S. and Henderson, J. (2001) Knowledge resource exchange in strategic alliances. *IBM System Journal.* Vol. 40, No.4, 908-924.

Parlby, D. (2000) *Knowledge management research report 2000.* KPMG Consulting London.

Parker, I. (1992) *Discourse dynamics: critical analysis.* Routledge.

Passfield, R. (2002) Creating innovation and synergy through a parallel action learning structure. *The Learning Organisation.* Vol. 9, No. 4, 150-158.

Pavlov, I. (1927) *Conditioned reflexes.* Oxford University Press.

Payne, J. and Sheehan, T. (2004) *Demystify knowledge management*. Constructing Excellence

Pemberton, J., and Stonehouse, G. (2000) Organisational Learning and Knowledge Assets : An Essential Partnership. *The Learning Organisation*, Vol. 7, No. 4, 184-193.

Pemberton, J., Stonehouse, G., and Barber, C. (2001) Competing with CRS-generated information in the airline industry. *Journal of Strategic Information Systems*. Vol. 10, Issue 1, 59-76.

Pemberton, J. and Stonehouse, G. (2005) The organisational characteristics of knowledge-centricity. In Montano, B. (eds.) *Innovations of knowledge mamagement*. IRM Press. 99-122.

Pemberton, J., Mavin, S., and Stalker, B. (2007) Scratching beneath the surface of communities of (mal)practice. *The Learning Organisation*. Vol. 14, No. 1, 62-73.

Pfeffer, J. and Nowak, P. (1976) Joint Ventures and Interorganisational Interdependence. *Administrative Science Quarterly*, Vol.21, 398-417.

Phillips, N. and Hardy, C. (2002) *Discourse analysis: investigating processes of social construction*. Qualitative research methods: Volume 50. Sage Publications.

Phornprapha, S. (2003) New challenge for leaders: managing emotions in the workplace. Sasin Journal of Management. Vol. 9, No. 1, 27-35.

Piputawat, S. (2000), *The description on Thai Air Laws*. Department of Aviation.

Pitfield, D. (2007) The impact of traffic, market shares and concentration of airline alliances on selected European-US routes. *Journal of Air Transport Management*. Vol. 13, Issue 4, 192-202.

Polanyi, M. (1966) *The Tacit Dimension*. Routedge & Kegan Paul.

Polanyi, M. (1974) *Personal Knowledge: towards a post-critical philosophy*. The University of Chicago Press.

Porter, M. (1990) *Competitive advantage of nations*. Free Press.

Porter, M. (1998) *Competitive advantage: creating and sustaining superior performance*. Free Press.

Potter, J. (2004) Discourse analysis. In Hardy, M. and Bryman, A. (eds.) *Handbook of data analysis*. Sage.

Prahalad, C.K. and Hamel, G. (1990) The Core Competence of the corporation. *Harvard Business Review*, May-June, 79-91.

Punch, K. (1998) *Introduction to social research: Quantitative and Qualitative approaches*. Sage.

Punch, K. (2005) *Introduction to social research: Quantitative and Qualitative approaches*. 2nd edition, Sage.

Purdie, T. (2000) British Airways Plc. In Stonehouse, G., Campbell, D., Hamill, J., and Purdie, T. (eds.) *Global and transnational business; Strategy and management*. John Wiley & Sons. 399-417.

Quinn, J., Anderson, P., and Finkelstein, S. (1996) Managing professional intellect: making the most of the best. *Harvard Business Review*. Vol.74, No. 2, 71-80.

Rich, M. (2003) Requirements for successful marketing alliances. *Journal of Business & Industrial Marketing*. Vol. 18, No.4/5, 447-456.

Riege, A. (2005) Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management*. Vol. 9, No.3, 18-35.

Robbins, S. (2001) *Organisational behavior*. 9th ed. Prentice Hall International.

Rock, P. (1979) *The making of symbolic interactionism*. Macmillan.

Rodsutti, M. and Makayathorn, P. (2005) Organisational diagnostic factors in family business: case studies in Thailand. *Development and Learning In Organisations*. Vol. 19, No.2,16-18.

Rossman, G. and Wilson, B. (1985) Numbers and Words; combining quantitative and qualitative mwthods in a single large-scale evaluation study. *Evaluation Review*. Vol. 9, No. 5, 627-643.

Sandelowski, M. (2000) Focus on research methods: combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. *Research in Nursing & Health*. Vol. 23, 246-255.

Santrock, J. (1997) *Psychology*. 5th ed. Medison.

Sarat, A. (1990) Off to meet the wizard: beyond validity and reliability in the search for a post-empiricist sociology of law. *Law and Social Inquiry*. Vol. 15. 155-170.

Sathaporn, S. (2006) *Understanding Thai value and culture-part 1*. Australian and Thai Chamber of Commerce. 1-10.

Saunders, M., Lewis, P., and Thornhill, A. (2003) *Research methods for business students*. 3rd edition, Pearson Education Press.

Savery, L. (1994) The perceive of styles of leadership of group workers on their attitudes to work. *Leadership and Organisation Development Journal*. Vol. 15, No. 4.12-18.

Schacht, O. (1999) *The evolution of organizational and learning in international strategic alliances in biopharmaceuticals*. Ph.D. Thesis, Cambridge University.

Schegloff, E. (1997) Whose text? Whose context? *Discourse and Society*. Vol. 8, No. 2, 165-187.

Schein, E. (1992) *Organisational Culture and Leadership*. 2nd edition. Jossey-Bass Publishers.

Schein, E. (2004) *Organisational Culture and Leadership*. 3nd edition. Jossey-Bass Publishers.

Schwandt, T. (2000) Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In Denzin, N. and Lincoln, Y. (eds), *The handbook of qualitative research*. 2nd edition, Thousand Oaks, CA: PineForge (Sage).

Scott, J. and Hogg, J. (1996) *Organisational structures and processes*. BTEC HNC HND business. 5. BPP Publishing.

Sekaran, U. (2000), *Research Methods for Business*. 3 rd edition, John Wiley & Sons.

Senge, P. (1992) *The Fifth Descipline : The Art and Practice of the Learning Organisation*. Century Business.

Senge, P. (2006) *The Fifth Descipline : The Art and Practice of the Learning Organisation*. Updated, Century Business.

Sharma, D. (1998) A model for governance in international strategic alliances. *Journal of Business & Industrial Marketing*. Vol. 13, No. 6, 511-528.

Shedlund, A. (2008) The knowledge system of a firm: social capital for explicit, tacit, and potential knowledge. *Journal of Knowledge Management*. Vol. 12, No.1, 63-77.

Silverman, D. (2000a), *Doing qualitative research: a practical handbook*. Sage Publications.

Silverman, D. (2003b) *Interpreting qualitative data*. 2nd edition, Reprinted, Sage Publications.

Sinclair, J. and Coulthard, R. (1975) *Towards an analysis of discourse: the English used by teachers and pupils*. Oxford University Press.

Sir Francis Bacon (1597) *Religious Meditations*. Of Heresies.

Skyrme, D. (2003) *Knowledge Networking: creating the collaborative enterprise*. Reprinted. Butterworth Heinemann.

Smart, A., Maull, R., Rador, Z., and Housel, T. (2003) An approach for identifying value in business processes. *Journal of Knowledge Management*. Vol. 7, No. 4, 49-61.

Smith, E. (2001) The role of tacit and explicit knowledge in the workplace. *Journal of Knowledge Management*. Vol. 5, No. 4, 311-321.

Smoliar, S. (2003) Interaction management: the next (and necessary) step beyond knowledge management. *Business Process Management Journal*. Vol. 9, No. 3, 337-353.

Soekijad, M. and Andriessen, M. (2003) Conditions of knowledge sharing in competitive alliances. *European Management Journal*. Vol. 12, No. 5, 578-587.

Solomon, M., Surprenant, C., Czepiel, J., and Gutman, E. (1985) A role theory perspective on dyadic interactions; the service encounter. *Journal of Marketing*. Vol. 49, Winter, 99-111.

Somnath, D., Pradyot, S., and Sanijit, S. (2003) Strategic Alliances : A Valuable Way to Manage Intellectual Capital? *Journal of Intellectual Capital*. Vol. 4, No. 1, 10-19.

Spence, K., Faber, I., and McFann, H. (1956) The relation of anxiety (drive) level to performance in competitional and non-competitional paired associated learning. Journal of Experimental Psychology. Vol. 50, 296-305.

Srinivas (2003), Knowledge Gaps. URL: http//www.gdrc.org/kmgmt/km-5.html.

Steffy, B. and Grimes, A. (1986) A critical theory of organisation science. *Academy of Management Review*. Vol. 11, No. 2, 322-336.

Stonehouse, G. and Pemberton, J. (1999) Learning and Knowledge Management in Intelligent Organisation. *Participation & empowerment : An International Journal*. Vol. 7, No. 5, 131-144.

Stonehouse, G., Pemberton, J., and Barber, C. (2001) The role of knowledge facilitators and inhibitors: lessons from airline reservations systems. *Long Range Planning*. Vol. 34. 115-138.

Stonehouse, G., Campbell, D., Hamill, J., and Purdie, T. (2000) *Global and transnational business; Strategy and management*. John Wiley & Sons.

Stover, M. (2004) Making tacit knowledge explicit: the ready reference database as codified knowledge. *Reference Service Review*. Vol. 32, No. 2, 164-173.

Stragier, J. (1999) Current issues arising with airline alliances. The 11th Conference of the European Law Association. Lisbon.

Strojny, M. (2004) *Knowledge management in Poland 2004*. Research report, KPMG.

Suen, W. (2002) Alliance strategy and the fall of Swissair. *Journal of Air Transport Management*. Vol.8, Issue 5, 355-363.

Sundaravej and Siriwan (2005) The myth of Nong Ngu Hao. Reprinted. Acmee Printing Co., Ltd.

Swart, J., and Kinnie, N. (2003). Sharing knowledge in knowledge intensive firms. *Human Resource Management Journal,* Vol. 13, No. 2, 60-75.

Swierczek, F. (1997) Culture and conflict in joint ventures in Asia. In Herbert, J., Davis, D., and William, D. (eds.) *National culture and international management in East Asia.* International Thomson Business Press.

Swierczek, F. and Onishi, J. (2003) Culture and Conflict: Japanese managers and Thai subordinates. *Personnal Review.* Vol. 32, No. 2, 187-210.

Tashakkori, A. and Teddlie, C. (1998) *Mixed methodology: combining qualitative and quantitative approaches.* Applied Social Research Series Volume 46, Sage Publications.

Technical Division (2005) *Statistics 2004.* Airport of Thailand, Thailand.

TG update (2002) Thai International Airways

Thai International Airways' Annual Report, 2007.

Thai International Airways (2006) *Thai International Airways' record...to Suvarnabhumi.* Bangkok Publisher Co., Ltd.

Thailand Country Review (2006) *Social overview.* EBSCOHOST Country Reports. 71-93.

Thayer, J. (1994), The tender trap. *Journal of European Business*, Vol. 5, No.3, 34-38.

Thomas, J., Kellogg, W., and Erickson, T. (2001) The knowledge Management puzzle: human and social factors in knowledge management. *IBM Systems Journal.* Vol. 40, No. 4, 863-884.

Titscher, S., Meyer, M. Wodak, R. and Vetter, E. (2002) *Methods of text and discourse analysis.* Reprinted, Sage Publications.

Todd, D. (1979) Mixing qualitative and quantitative methods: triangulation in action. *Administrative Science Quarterly.* Vol. 24, Issue 4, 602-611.

Todeva, E. and Knoke, D. (2005) Strategic Alliances & Models of Collaboration, *Journal of Management Decisions*, Vol. 43, No.1, 123-148.

Transport Newspaper (2006) *The pride of the Ministry of Transport on aviation rights negotiation.* 24th-30th April, p. 4.

Triandis, H. (1988) Collectivism and individualism: A reconceptualization of a basic concept in cross-cultural psychology. In G. K. Verma and C. Bagley

(eds.), *Personality, attitudes and cognitions* (pp. 60-95). London, England: Macmillan.

Tsui, E. (2005) The role of IT in KM: where are we now and where are we heading? *Journal of Knowledge Management*. Vol. 9, No. 1, 3-6.

Van Maanen, J., (1983) *Qualitative methodology*. Sage Publications.

Veldhuis, J. (2005) Impact of Air France-KLM merger for airlines, airports and air transport users. *Journal of Air Transport Management*. Vol 11, Issue 1, 9-18.

Vichailuck, S. and Vichailuck, S. (1982), *Air Navigation Act B.E. 2497*. Neetivetch.

Vyas, N., Shelburn, W., and Rogers, D. (1995) An analysis of strategic alliances: forms, functions and framework. *Journal of Business & Industrial Marketing*. Vol. 10, No. 3, 47-60.

Wagner, J. and Moch, M. (1986) Individualism-collectivism: concept and measures. *Group and Organisation Studies*. Vol. 11, No. 3, 280-304.

Waring, T. (2004) Communicating the complexity of integrating information systems: a case study of the procurement of a payroll-personnel system. *Human Resources Development and Management*. Vol. 4, No.4, 431-448.

Weber, M. (1968) Economy and society. Edited by Roth, G. and Wittich, C., New York: Bedminster Press.

Wernerfelt, B. (1995) A resource-based view of the firm: ten years after, *Strategic Management Journal*, Vol. 5, 171-180.

Werther, W. (1998) Interim management of international strategic alliances. *Management Decision*. Vol. 36, No. 5, 339-345.

Wetherell, M., Taylor, S., and Yates, S. (2001) *Discourse theory and practice: a reader*. Sage.

William, B. (2003) The worldview dimensions of individualism and collectivism: implications for counseling. *Journal of Counseling and Development*. Vol. 81, No.3, Summer, 174-181.

Williams, M. (2003) *Making sense of social research*. Sage Publications.

Wood. L. and Kroger, R. (2000) *Doing discourse analysis: methods for studying action in talk and text*. Sage.

Yang, M., Liao, C., and Liu, S. (2007) Applying internet-based information systems to facilitate business alliance activities. *Industrial Management & Data Systems*. Vol. 107, No. 1, 125-140.

Yates, S., Taylor, S., and Wetherell, M. (2001) Discourse as data: a guide for analysis. Sage.

Yin, R. (1994) *Case study research: design and methods*. Sage Publications

Yin-Tong Sun, P. and Scott, J. (2005) An investigation of barriers to knowledge transfer. Journal of Knowledge Management. Vol. 9, No. 2, 75-90.

Zhang, Y. and Round, D. (2008) China's airline deregulation since 1997 and the driving forces behind the 2002 airline consolidations. *Journal of Air Transport Management*. Vol. 14, Issue 3, 130-142.

Zikmund, W. (2000) *Business research methods*. 6th edition, The Dryden Press.

Zuber-Skerritt, O. (2002) The concept of action learning. *The learning Organisation*. Vol. 9, No. 3, 114-124.

URLs

URL1: http://www.staralliance.com/en/meta/airlines/CA.html

URL2: http//edward-lee.com/aitskyteam.html

URL3: http//www.oneworldalliance.com/

URL4: http//www.edward-lee.com/airwings.html

URL5: http//www.geocities.co.jp/SilkRoad-Forest/8650/oceanicgw.html

Appendix A

Interviews in Phase 1 and 3

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เรื่อง ขอความอนุเคราะห์ในการให้สัมภาษณ์

เรียน .....

สายการบิน .....

ดิฉัน นางสาวฐิตารีย์ ศิริศรีษรชัย นักศึกษาปริญญาเอก (Ph., D.) คณะยุทธศาสตร์การจัดการ, การตลาด, และการท่องเที่ยว มหาวิทยาลัยนอร์ทธัมเบรีย ประเทศอังกฤษ กำลังทำการวิจัยเกี่ยวกับยุทธศาสตร์การเรียนรู้และการพัฒนาในกลุ่มพันธมิตรและภายในองค์กร โดยใช้อุตสาหกรรมการบินของประเทศไทยเป็นกลุ่มตัวอย่าง คณะที่ปรึกษาในการวิจัยนี้ คือ ศาสตราจารย์ จอร์จ สโตนเฮ้าส์ (Prof. George Stonehouse) และ ดร. โจนาธาน เพมเบอร์ตั้น (Dr. Jonathan Pemberton)

ดิฉันใคร่ขอความอนุเคราะห์จากท่านในการขอสัมภาษณ์ โดยมีวัตถุประสงค์เพื่อนำไปใช้ในการศึกษาวิจัย การวิจัยนี้จะสำเร็จลงไม่ได้หากไม่ได้รับความอนุเคราะห์จากท่านในครั้งนี้ ดิฉันจึงขอขอบพระคุณท่านมา ณ โอกาสนี้

ขอแสดงความนับถืออย่างสูง

(นางสาวฐิตารีย์ ศิริศรีษรชัย)

Professor Kay Fuller

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Newcastle Business School
Dean
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8 July 2003

Dear Sir/Madam

This is to certify that

Thitarree Sirisrisornchai

is enrolled on a full time Doctor of Philosophy (PhD) programme at Newcastle Business School, Northumbria University, UK and is supervised by Professor George Stonehouse and Dr Jon Pemberton.

Thitarree is researching knowledge sharing in strategic alliances, with particular emphasis on the Thai airline industry. To this end, it would greatly assist her research if you would be willing to grant her an interview to discuss a range of issues relating to this topic. Any information provided will be used solely for the purpose of her academic work and anonymity is guaranteed.

Your help in this matter is much appreciated.

Yours faithfully,

G. H. Stonehouse

Professor George Stonehouse

Jon D. Pemberton

Dr Jon Pemberton

Airlines: .....

Date of the interview: .....

Interviewee's Information :

- Name: .....
- Position: .....
- Contact Information: .....

  .....

  .....

Section 1

Q1). What are the main motives of your alliance affiliation?

Q2). What does your airline get from your network?

Q3). What does your airline give to the group?

Q4). Are you satisfied with the reciprocal benefits you have?

Q5). What are the main reasons that sustain your membership in the group?

Q6). What do you expect to get from the group in the future?

Section 2

Q1). How do you cooperate with other members?

Q2). How often does the network set meeting and who is your representative?

Q3). What technologies do you use to coordinate with each partners and within your organisation?

Q4). In your organisation, do you have knowledge manager?

Interview 1 Conclusion for Respondent Airlines

In knowledge-based view, airline alliance is a method of learning and absorbing knowledge of partners in which conceals in superior performance of specific airline business operation process within particular market of each partner. Therefore, related to the gathered data, airlines expect to learn how their partners operate their service production within specific market to develop a new knowledge to overcome their limited capability and expand their market coverage at the same time.

Generally, successes of the group and airlines themselves are the most important factors of alliance stability and sustaining. Focusing on these successes in which airlines measure on level of revenue enhancement, cost reduction, operative efficiency, and new knowledge development, they are grounded on criteria in choosing partners and the ways they operate and control alliance. Other than joint development, airline partners help each other, particularly, when some of them have a difficult business time.

Evidences from the interviews can be inferred that cooperations in airline industry are conducted under three themes; cooperation within alliance network, in cross alliance networks, and with stand-alone airlines. Under these three themes, sharing assets and capabilities in which derived from their core competences transfers knowledge patterns between partners. Because difference themes have different range of cooperation, cooperation with alliance network is the main stream while the other two themes are agreed as a complementary cooperation in areas that the main stream does not cover. External cooperations of respondent airlines are limited to span of the relevant joint activities. Within alliance network, coordination has been devoted for development of interline air transport service such as IT platforms.

Most respondent airlines are branches in Thailand. The number of their employees in Thailand is small (less than 100 people). At this point, employees' relationship is closed. Branches' organization structures are flat. Respondent airlines manage internal cooperation according to job flows. Therefore, they have both routine and provisional coordinations. Their coordinations are enriched by meeting frequently and constantly, training at the head offices, cross department training, on-off duty associations, and emphasizing on practical result. In most cases, staff's formal and informal coorporate activities are supported, inspected, and tied up to assessment system.

The leading global alliance networks in the industry have separated organizations to operate alliance activities. They set chief executive board meeting once or twice a year to discuss on strategic issues. Locally, every respondent airlines have an officer or a team that coordinates and operates internal activities to implement the group objectives and cooperates with airline partners. Although all respondents realise on potential of knowledge and learning essence, none of the respondent airlines runs knowledge department.

XXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXX

25th September 2005

Dear ……,

I am Thitarree Sirisrisornchai, a PhD student under the supervision of Professor George Stonehouse (george.stonehouse@unn.ac.uk) and Dr. Jon Pemberton (bmjp1@central.unn.ac.uk) at Newcastle Business School, Northumbria University.

I am carrying out research about knowledge sharing between organisations. I am conducting the interview for the last phase by aiming to complete the research project in March 2006.

As we talk on the phone, the interview is regarding on dynamics of knowledge sharing in your alliance network. The 14 questions are attached with this e-mail.

Your answers are of the greatest importance to the success of this study. Any information provided will be treated in the strictest confidence for academic purposes only.

Your help in this research is much appreciated and highly valued.

Thitarree Sirissrisornchai
09-XXXXXX2
thitarree.sirisrisornchai@unn.ac.uk

XXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXX

10 กันยายน 2548

เรียน .....
เรื่อง ขอความอนุเคราะห์สัมภาษณ์

ดิฉัน นางสาว ฐิตารีย์ ศิริศรีษรชัย
นักศึกษาปริญญาเอกภายใต้การให้คำปรึกษาของ ศาสตราจารย์ จอร์จ สโตนเฮ้าส์ (george.stonehouse@unn.ac.uk) และ ดร. จอนน์ เพมเบอร์ตั้น (bmjp1@central.unn. ac.uk) คณะบริหารธุรกิจ มหาวิทยาลัยนอร์ธธรัมเบรีย ประเทศอังกฤษ ขอบพระคุณคุณยงยุทธ์ที่เคยอนุเคราะห์ให้ข้อมูลค่ะ ผลสรุปของการเก็บข้อมูลได้แนบมากับจอหมายฉบับนี้

ในขณะนี้การวิจัยอยู่ในช่วงสุดท้ายของโครงการที่คาดว่าจะเสร็จสมบูรณ์ภายในเดือนมีนาคม 2549 ซึ่งยังต้องเก็บข้อมูลเพิ่มเติมบางส่วน จึงใคร่ขอความอนุเคราะห์จากคุณยงยุทธ์อีกครั้ง ในการสัมภาษณ์เพิ่มเติมเกี่ยวกับการกระจายความรู้ในกลุ่มพันธมิตรสายการบิน คำถามทั้งสิบสี่ข้อได้แนบมาพร้อมกับจอหมายฉบับนี้

ข้อมูลที่ได้จากการวิจัยจะนำไปใช้ในทางการศึกษาเท่านั้น ความอนุเคาระห์ของท่านมีความสำคัญอย่างยิ่งต่อความสำเร็จของการศึกษานี้

ด้วยความนับถือ

ฐิตารีย์ ศิริศรีษรชัย

09-XXXXXX2
thitarree.sirisrisornchai@unn.ac.uk

Alliance Networks:.....
Date of the interview: .....
Interviewee's Information :

- Name: .....
- Position: .....
- Contact Information: .....
  .....
  .....

Section 1

Q1). In academic point of view, organisation culture can be classified in two characteristics as individualism (independent working style) and collectivism (dependent working style), in your alliance network which kind of culture can explain value in your group in which way?

Q2). How do you describe your group distinctive characteristics?

Q3). How do you perceive your management style?

Q4). How do you manage learning and sharing knowledge in your group?

Q5). How do you communicate with your airline partner regarding assigned activities?

Q6). Which kind of information you share within your network?

Q7). How do you protect confidential information of your group from other group while your airlines partners have sub contact or sub cooperation with airlines in other alliance network?

Q8). Have you experience any difficulties in providing information to your airlines members? What are they?

Q9). How do you encourage airlines in your group to cooperate to the group policy and campaign?

Q10). How do you make sure that airlines' representatives you contact can contribute and control operation the launched scheme?

Q11). How do you perceive relation between members in your alliance?

Q12). How do you describe your member airlines according to your cooperative experience?

Q13). Could you please describe your own working style-how do you motivate your colleague and subordinate? And could you define a short sentence that could describe cooperative characteristic of each partner of your alliance network in Thailand, please?

Lengths of the Interviews and the Fictitious Names

	Research Participants (Fictitious Names)	Lengths of the interviews
Phase 1	1). Peter	38 minutes
	2). Andrian	1 hour 58 minutes
	3). Alis	52 minutes
	4). Sara	1 hour 29 minutes
	5). Luna	32 minutes
	6). Max	53 minutes
	7). Auston	29 minutes
	8). Tim	35 minutes
Phase 3	1). Vernon	32 minutes
	2). Stephen	1 hour 9 minutes
	3). William	51 minutes

QSR N6 Full version, revision 6.0.
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PROJECT: project, User TS, 11:52 am, Jan 30, 2006.

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Margin coding keys for selected nodes in document Copy of Interview 1 for N6:
A: (1 1) ~lication in Airline Allis/Airlines' Perspective E: (1 5) ~rline Allis/Satisfaction on Reciprocal Benefits
B: (1 2) ~ation in Airline Allis/Government's Perspective F: (1 6) ~pplication in Airline Allis/Attitude towards KM
C: (1 3) ~in Airline Allis/Alliance Network's Perspective G: (1 7) ~ion in Airline Allis/Tools in Sharing Knowledge
D: (1 4) /KM Application in Airline Allis/Reasons of Alli

+++ ON-LINE DOCUMENT: Copy of Interview 1 for N6
+++ Document Description:
* No Description

+++ Retrieval for this document: 934 units out of 934, = 100%
++ Text units 1-934:

1

*Northwest 2 A

3 A
4 A
Interviewer: What are motives that Northwest allies or cooperate with 5 A
other 6 A
lines? 7 A
Northwest: In Thailand, Northwest cooperates with KLM and we focus on 8 A D
cost sharing. As for operation, we do it separately. For product, we 9 A D
also manage individually. We don't do block spacing. Routes that we 10 A D
have are not overlap. We negotiate in the aspect of marketing alliance. 11 A D
We have the same first class product and do joint advertising. So, we 12 A D
separate what we do together, which airlines do what, to not repeat. If 13 A D
Northwest does this, K will do other things. 14 A D
Right now, we close wings because members in the group over expect and 15 A D E
look too deep in the term of alliance. We had long term agreement in 16 A D E
which lack fluency while other groups such as STAR. It has short term 17 A D E
agreement and adapt according circumstances in which support STAR to be 18 A D E
more alert, fluency and has higher potential in the group. At this 19 A D E
moment, KLM already sold all of Northwest's stocks and joined with Sky 20 A D E
Team. 21 A D E
It's because Sky Team still hadn't had important network in the US, while 22 A D
STAR has united and US Airways, One World has American Airlines. As for 23 A D
other groups, they are small and have less potential. 24 A D
Interviewer: What benefits alliance network gives Northwest? 25 A
Northwest: Benefits in the term of network in countries. Actually, 26 A D E
other than an agreement with Sky Team, Northwest also has subagreements 27 A D E
with other small airlines in foreign countries in which expand 28 A D E
Northwest's network. 29 A D E
Interviewer: What benefits Northwest gives alliance network? 30 A E
Northwest: Northwest is an important network in the US. Size and 31 A E
number of Northwest's destinations can increase a group's potential and 32 A E
stability. And also increase confidence of that group's members. 33 A E
Interviewer: Does Northwest satisfy with reciprocal benefits? 34 A E
Northwest: We can not conclude right now because Northwest has joined A E
Sky 35 A E
not for a long time. 36 A E
Interviewer: When did you join the Sky? 37 A
Northwest: Since April, this year. As for K., it hasn't decided to A
join 38 A
with whom whether to join with the Sky with Northwest or not. Probably, 39 A
it might join BA. However, it is still quite in Oneworld. 40 A
Interviewer: What will Northwest expect from the group in the future? 41 A E
Northwest: It is too early to tell. We need longer period of time to A E
get 42 A E
a result of cooperation which clearer than now to forecast and expect. 43 A E

Interview Coding Arrangement

Reasons for Alliances

Respondent 1

In Thailand, XXX cooperates with XXX and we focus on cost sharing. As for operation, we do it separately. For products, we also manage individually. We don't do block spacing. Routes that we have do not overlap. We negotiate in terms of marketing alliance. We have the same first class product and do joint advertising. So, we separate what we do together, which airlines do what, in order not to repeat. If XXX does this, XXX will do other things.

Right now, we have closed XXX because members in the group over expect and look too deeply in the terms of the alliance. We had long term agreement which lacked fluency while other groups such as XXX. It has short term agreement and adapt according circumstances in which support XXX to be more alert, fluent and have higher potential in the group. At this moment, XXX has already sold all of XXX's stocks and joined with XXX.

It is because XXX still hadn't had an important network in the US, while XXX has united. , Meanwhile, XXX has XXX. As for other groups, they are small and have less potential.

There are benefits in terms of network in other countries. Actually, other than an agreement with XXX, XXX also has sub-agreements with other small airlines in foreign countries which expand XXX's network.

Respondent 2

Code Sharing led to XXX Alliance. In 1994, first of all, you must know that international flight operation needs international agreement. It is called the Air Services Agreement, Bilateral – Pairs, Multilateral Air Services Agreement is more difficult. This is a negotiation with benefits to the country regarding carrying people internationally. Then, multilateral has a number of limitations, for instance, if you give one country more than others, it will be turmoil.

It means flights of XXX to Frankfurt has a flight of XXX on that journey. The meaning of code sharing involves passengers up-loading obligation. It shows if operating code share, an airline who operates must be responsible for un-operated airlines that use its flight. If the flight is operated by XXX, it will be printed XXX and XXX on the ticket. For cooperation, airlines must have every close standards. Will XXX code share with Laos? Service...at this point, should be from flight, safety, security. We share codes. We help each other's sales. Marketing are also cooperating. This is the

concept that we discussed in September 1994. We have common understanding. We had to wait for International Aviation's officer to authorise.

For selling, we help each other. They have common unit cost. If it is XXX's flight but it is operated by XXX, how much does it cost? For example, if XXX sell a ticket, how do they agree and XXX send money to XXX and vice versa. Reservation is common. In June 1995, we started to operate code sharing, but the agreement has rules.

After we had done it for a year, progress was good...traffic increased. We help each other's sales.

Firstly, the network of XXX has expanded. When a passenger in Dusseldorf wants to come to Phuket, he goes to XXX's office: XXX has XXX and others on a board. It has evolved...bilateral code sharing, domestic sector, international sector, third party code sharing. We do and they are good. At that time, the brain was very bright. People know their flight...network, when they fly, it is XXX. We must tell them...try not to make customers feel the difference no matter which airlines operate. We have to focus on standard...seat arrangement and so on. To be an alliance, it has to be of a similar standard.

Marketing is also a factor. Each airline has its own policy. They have margin. And those who make a sale will get sales commission. Actually, it's an agent's tactics to give a discount from a commission, because in the end, any airlines have to go along with the agreement. However, in terms of margin, it's a tactic of an agent. For example, if the agent wants to make a high sales record, it might reduce benefit from 5% to 2%.

As for services at the airport, it is normal...we are the host country for XXX Alliance. We have to service, give location...location in a good position, good luggage service. In Singapore, XXX is the host carrier. Will it embarrass other members of XXX Alliance? Then, we have to manage well. If they are not in XXX Alliance, the services are at a good level, if they are in XXX, the services are better. This is normal.

Respondent 3

... set up a business together in order to increase a number of customers in the case that an airline couldn't reach some destinations but other airlines in the alliance network do. We can help each other sell , help each other cooperate, because some of our customers want to go to destinations that we don't fly to. How can we do that? Setting up an alliance can serve wider.

Interviewer: Are you saying the main reason for alliance with Lufthansa is network expansion? Yes, it was a reason at that time. It is a joint customer base of airlines in the alliance. They are network and customer base expansions.

Code sharing is a second factor but also important because other than we don't operate flight, when we don't have enough customers to operate a route, a partner can operate while we don't have to do a full investment if we are not sure whether we can operate seats full flight. Expand network come first.

As for the worldwide view, generally, customers stick with us and also the group. When customers get benefits from the group, they will return to us. The second point is when the network is expanded, we can serve more customers and they are with us. In conclusion, we want customers to use our service. In Bangkok, we benefit from being a partner with XXX. People can get a member card of the national carrier which is XXX. For destinations that XXX doesn't operate, they will choose other airlines in the group. In the terms of sales and marketing, they are easier.

That's right but a lot of benefits can be cross redemption or include use lounge for example. We have are rules, of which there can be many. We cannot finish them in this interview. However, normally a person who has a higher level of card can use our lounge or XXX's lounge worldwide. If a customer is a member of Royal Orchid Plus, he can redeem a ticket from other airlines in this group or upgrade, for instance, between XXX and XXX. In detail, it is a lot.

In the group, right? We serve the network in routes that we operate but other members in the group don't. In Europe, for example, we are very wide, the widest in Europe within the XXX. In Europe, XXX has XXX and XXX which has more limited network than us. If you ask about what we give the group, for example, with XXX, if its customers come to Europe, they can fly with us. It involves a fair agreement. If Thai Inter doesn't operate a route, a customer can fly with airlines in the group by paying a little bit more. We serve in Europe. Similarly, XXX serves in Asia for us because does not widely cover Asia. We help each other. For instance, XXX and XXX are wide in America but they are not in Europe. Therefore, we help them in Europe.

Respondent 4

The reasons. First, it's potential of partners. They must have class and be good enough. We join them and have to look at their market, too. If it is O.K., we can operate by ourselves. We look at many things about investment, for example, if the partners have high potential. It's like a beginning, we will join first and if everything is good, we will operate by ourselves. It is one way to expand network.

We do not do it because has lower technologies than other worldwide airlines, systems included booking are just developing although we have operated for a long time. For XXX, we focus on safety. For all airlines around the world, in terms of safety, XXX is number one, but not a lot of people know this. Most people think airlines that originate in China are scary. China has more than 30 airlines. When an airline from China has an accident, people will assume Chines airlines are dangerous generally. Since we have operated, we had only one case of a problem last year in Phu-San.

We support each other in terms of marketing. When we start our cooperation, we do joint selling with them. In some flights, Air China doesn't operate, but shares slot, sale, too. We have joint benefits. If they have a good service, we can learn.

Respondent 5

XXX understands capabilities limitations of operation alone in a complex regulated industry. Alliance helps it in cost minimisation and network expansion. Cooperation in IT for example, although XXX is the second largest airline in the world, it will be more efficient if we help each other or have a joint investment.

Respondent 6

In XXX Alliance, at the beginning there are 5 founder airlines. XXX is one of the founders and it is the only Asian airlines in the group of XXX. As for the motives, I think there are 3. Firstly, in terms of service, I think XXX is needed by the group to link service in Asia. We provide service in the aspect of seamless service. For example, joint lounge service, smooth journey from checking in to destination, service for businessman. Use the same mileage collection programme. Transfering miles within the programme is possible such as in Asia, where we have Asia Miles, a center programme, the main programme in collecting miles of the group. Secondly, it's about cost saving. The purpose of alliance, other than service, is cost and the need. To try to make it the lowest. To support negotiating power in buying, or in running a business with supplier. Thirdly, it is revenue -enhancing for airlines in the group, increasing revenue by linking joined routes. XXX flies to 50 destinations worldwide. When we have XXX to support us, it has increased to over 950 destinations. These are motives.

They are important equally.

Code sharing is a supporter for service, cost saving, and revenue enhancing but code sharing for XXX, it's not only in the group. XXX doesn't ignore other Airlines outside the group.

Respondent 7

The main reasons are that with competition growing and the international traveller becoming more conscious of price and value for money, plus the need to keep their costs down, full service airlines (as opposed to low cost carriers) are increasingly finding that belonging to an alliance gives them added opportunities to not only take part in large cost saving projects, but to get more interline feed (interconnecting passengers) off other members of the alliance. In this way they can enhance their revenue. XXX carriers are working together on a project for the joint purchase of up to 100 regional jets; we have a preferred supplier arrangement with Rockwell, the US Avionics firm to purchase

avionics to a set standard; we are working on trying to standardize in-flight entertainment purchasing and also working on a common Information Technology platform that would cover things like reservations.

Respondent 8

The main reasons are cost reduction, network expansion, overcoming restriction, and reduction of competitive force.

We look after benefits of our country, fairness, and aviation development in Thailand. Major alliances are XXX; XXX is in this group, you know right?, XXX, XXX, and other small groups. As long as their operations and policies comply to our regulations, the nation's economic development master plan, and no petition, it has no problem.

Appendix B

Questionnaire in Phase 2

XXXXXXXXX
XXXXXXXXX
XXXXXXXXX

Dear

I am Thitarree Sirisrisornchai, a PhD student in Organisational and Individual Performance Department of Newcastle Business School, the University of Northumbria at Newcastle.

I am doing a research about knowledge sharing between organisations. This study will be completed in March 2006.

Thank you very much for your participation in answering this questionnaire. Your answers are of the greatest importance to the success of this study.

The purpose of this questionnaire is to identify critical activities in knowledge sharing within your organisationand between your airline partners. The results will be utilized in developing how learning and knowledge sharing take place and their roles in operational activities, as well as sustaining collaborative relationship with your partners.

Any information provided will be treated in the strictest confidence for academic purposes only. Your and your company's anonymity are guaranteed. A copy of the statistical summary will be forwarded to you.

It would appreciated if you could return the questionnaire in the enclosed envelop by 1st November 2004.

Your help in this research is highly valued.

Thitarree Sirissrisornchai

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8 July 2003

Dear Sir/Madam

This is to certify that

Thitarree Sirisrisornchai

is enrolled on a full time Doctor of Philosophy (PhD) programme at Newcastle Business School, Northumbria University, UK and is supervised by Professor George Stonehouse and Dr Jon Pemberton.

Thitarree is researching knowledge sharing in strategic alliances, with particular emphasis on the Thai airline industry. To this end, it would greatly assist her research if you would be willing to grant her an interview to discuss a range of issues relating to this topic. Any information provided will be used solely for the purpose of her academic work and anonymity is guaranteed.

Your help in this matter is much appreciated.

Yours faithfully,

G. H. Stonehouse

Professor George Stonehouse

Jon D. Pemberton

Dr Jon Pemberton

A Study of Knowledge Sharing Within Organisations and Between Alliance Partners

Newcastle Business School
Northumbria University
United Kingdom

Ref.

Guidelines for Completion:

In part I, sections A-F, Please indicate by cycling the appropriate numbers the extent to which you agree or disagree with the statements given. In part II, please answer questions in the boxes provided.

Part I

Section A		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
A1	Your organisation structure is flexible and has changed according to circumstances.	1	2	3	4	5
A2	Learning and sharing knowledge are vital elements of your airlines' business strategy.	1	2	3	4	5
A3	Your managers value subordinates' willingness to learn and share knowledge.	1	2	3	4	5
A4	Your status in your airline would be affected negatively if you did not share knowledge.	1	2	3	4	5
A5	Training opportunities are based on the performance of each employee irrespective of their job status.	1	2	3	4	5
A6	Learning and knowledge contribution are monitored and related to an appraisal system.	1	2	3	4	5
A7	Your airline has a system to control intellectual knowledge.	1	2	3	4	5
A8	Employees are trusted to make decisions regarding on all aspects of their jobs.	1	2	3	4	5

Section B (In this section, ICT refers to information and communication technology.)		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
B1	The use of ICT is a basic skill of all employees.	1	2	3	4	5
B2	The use of ICT is integrated as part of daily working practice.	1	2	3	4	5
B3	Both hard- and soft- ware for communication systems are constantly updated.	1	2	3	4	5
B4	Training for new hard- and soft- ware for communications is always given.	1	2	3	4	5
B5	Computer based information for processing job-tasks available as needed.	1	2	3	4	5

Section B (Continued)		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
B6	Information provided in departments is available in several formats (e.g. Paper, electronic).	1	2	3	4	5
B7	Technology is used to support knowledge creation in addition to using it as a communication tool.	1	2	3	4	5

Section C		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
C1	Your airline has clear instructions and guidelines for performing work-based tasks.	1	2	3	4	5
C2	You see sharing knowledge with your colleagues as an opportunity for career development.	1	2	3	4	5
C3	Knowledge sharing within your organisation is typically shared from superiors to subordinates.	1	2	3	4	5
C4	Superiors learn new things from subordinates.	1	2	3	4	5
C5	Working with your colleagues is competitive.	1	2	3	4	5
C6	Your airline encourages you to attend external training programmes as needed.	1	2	3	4	5
C7	Monetary incentives increase your willingness to share knowledge.	1	2	3	4	5
C8	You learn from your colleagues how to better perform your job.	1	2	3	4	5
C9	Internal cross departmental meetings to discuss alliance activities are frequently arranged.	1	2	3	4	5

Section D		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
D1	Your airline shares the alliance's objectives.	1	2	3	4	5
D2	Meetings, conferences, and seminars are conducted regularly between your organisation and airline partners.	1	2	3	4	5
D3	The success of your airline is more important than the success of your alliance network.	1	2	3	4	5

Section D (Continued)		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
D4	Sharing information between partners is an open and easy process.	1	2	3	4	5
D5	Contacts with employees of partner airlines is supported.	1	2	3	4	5
D6	In Thailand, new alliance initiatives for all members are arranged by your airline.	1	2	3	4	5
D7	The non-sharing of knowledge with partners has the significant effect on relationship with other alliance partners.	1	2	3	4	5
D8	Your boss and colleagues monitor learning and sharing knowledge with allied airlines' employees.	1	2	3	4	5
D9	The benefits arising from being part of the alliance have influence your company continuing membership of the alliance.	1	2	3	4	5

Section E		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
E1	Your airline has jointly developed a technological platform with your partners.	1	2	3	4	5
E2	The jointly developed technological platform allows communication between you and your alliance partners.	1	2	3	4	5
E3	Information concerning your partners' business operation is usually available as needed.	1	2	3	4	5
E4	Information provided to different partners is distributed in several formats (e.g. paper, electronic).	1	2	3	4	5
E5	Partners are authorized to access data created from joint activities.	1	2	3	4	5

Section F		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
F1	Partners often share their key knowledge and skills within the alliance.	1	2	3	4	5

Section F (Continued)		Strongly Disagree	Dis-agree	Neither Agree or Disagree	Agree	Strongly Agree
F2	Your airline has provided several training programmes for your alliance partners.	1	2	3	4	5
F3	Information of your airline is available to your alliance partners.	1	2	3	4	5
F4	Information of your alliance network is available to your alliance.	1	2	3	4	5
F5	Your airline provides your customer data to partner airlines.	1	2	3	4	5
F6	Your airline provides information on internal business operations and processes with partner airlines.	1	2	3	4	5
F7	Your airline provides records of business performance to partner airlines.	1	2	3	4	5
F8	Sharing idea with partners offering competing routes and services is discouraged.	1	2	3	4	5
F9	The information provided by your partners is clear and reliable.	1	2	3	4	5
F10	Strategic goals are shared between partners.	1	2	3	4	5

Part II

Name of organisation

Your job title

What is your nationality?

What is your highest level of education?

How long have you been working in this organisation?

How many years of total work experience do you have (including work in this organisation and others regardless ofindustry)?

How many employees does your organisation have in the Thai branch?

In the box below, please provide additional information in term of difficulties you experienced in the information accessing and distributing in your allied group.

Please add any additional comments relating to the content of the questionnaire.

Thank you very much for your time and effort

Phase II: Questionnaire

Thank you very much again. Your help for participating in this questionnaire survey is much appreciated.

Introduction

In this phase, questionnaire with 48 Likert scale statements is the main tool. Airlines in alliance networks in Thailand are the target respondents. SPSS 12 was software that assisted process of analysing data. Regarding on natures of raw data available, nonparametric test was employed. Data was arranged into three sets according to respondents' qualifications in terms of alliance networks, managerial responsibilities, and office locations. Statistical critical values of each set are represented as S in which displayed a significant difference of their attitude. Table A-1 is illustrated the conclusion of statistic outcomes.

Data was approached into two main themes; intra and interorganisational scopes. In each theme, the analysis was focused in terms of culture, leadership, ICTs usage, and knowledge sharing.

The Conclusion for the Respondents in Phase II

According to experience from observation during conducting primary research and the results from the survey, value clusters that reflect from Thai society are loyalty from gratefulness, seniority, considerate, and face. Loyalty from gratefulness has much to affect on informal communities of practice in the airlines and pay back behaviour. Seniority, considerate, and face have important role on the way airlines' employees treat each other and on style of their learning and sharing knowledge. For instance superior employees in airlines trust their subordinates in different degrees depended on trust based on relation between them and empowerment. On the other hand, subordinates in Thai culture always trust and heavily rely on information provided by their superior.

Learning and sharing knowledge are in airlines daily operation when communication occurred (both self and interpersonal communications). Under a communicated flow, it could consist of data, information, and/or knowledge. The results from the survey on the issue of monitoring knowledge sharing activities indicate human involvement in all knowledge sharing levels from individual to interorganisation. Airlines' employees embrace roles of practitioner and the monitor in operating their job tasks at the same time.

The use of ICTs is a basic skill of airline employees and the use of ICT is integrated as a part of daily working practice. By this role, ICTs facilitate learning and sharing knowledge in objects.

Intention to learn and share knowledge in an organisation and a network can be considered in terms of individual and organisational. As for alliance network, learning and sharing knowledge are depended on learning capabilities, considering

between devotion to the group and allegiance to organisation, and attitude towards knowledge activities of individual and organisation.

Table A-1: Statistical Tests Conclusion

Codes	Statements	Critical Values From Statistical Tests		
		Alliance Networks	Managerial Responsibility	Office Locations
A1	Your organisation structure is flexible and has changed according to circumstances.	X	X	X
A2	Learning and sharing knowledge are vital elements of your airlines' business strategy.	S	X	X
A3	Your managers value subordinates' willingness to learn and share knowledge.	S	S	X
A4	Your status in your airline would be affected negatively if you did not share knowledge.	X	X	X
A5	Training opportunities are based on the performance of each employee irrespective of their job status.	X	X	X
A6	Learning and knowledge contribution are monitored and related to an appraisal system.	X	X	S
A7	Your airline has a system to control intellectual knowledge.	X	X	X
A8	Employees are trusted to make decisions regarding on all aspects of their jobs.	X	X	X
B1	The use of ICT is a basic skill of all employees.	S	X	X
B2	The use of ICT is integrated as part of daily working practice.	X	X	X
B3	Both hard- and soft- ware for communication systems are constantly updated.	X	X	X
B4	Training for new hard- and soft- ware for communications is always given.	X	S	X
B5	Computer based information for processing job-tasks available as needed.	X	X	X
B6	Information provided in departments is available in several formats (e.g. Paper, electronic).	X	X	X
B7	Technology is used to support knowledge creation in addition to using it as a communication tool.	X	X	X
C1	Your airline has clear instructions and guidelines for performing work-based tasks.	X	X	X
C2	You see sharing knowledge with your colleagues as an opportunity for career development.	X	X	X

C3	Knowledge sharing within your organisation is typically shared from superiors to subordinates.	X	X	X
C4	Superiors learn new things from subordinates.	X	X	X
C5	Working with your colleagues is competitive.	X	X	X
C6	Your airline encourages you to attend external training programmes as needed.	X	X	X
C7	Monetary incentives increase your willingness to share knowledge.	X	X	X
C8	You learn from your colleagues how to better perform your job.	X	X	X
C9	Internal cross departmental meetings to discuss alliance activities are frequently arranged.	X	X	X
D1	Your airline shares the alliance's objectives.	X	S	X
D2	Meetings, conferences, and seminars are conducted regularly between your organisation and airline partners.	S	X	X
D3	The success of your airline is more important than the success of your alliance network.	X	X	X
D4	Sharing information between partners is an open and easy process.	X	X	X
D5	Contacts with employees of partner airlines is supported.	X	X	X
D6	In Thailand, new alliance initiatives for all members are arranged by your airline.	X	X	X
D7	The non-sharing of knowledge with partners has the significant effect on relationship with other alliance partners.	X	X	X
D8	Your boss and colleagues monitor learning and sharing knowledge with allied airlines' employees.	X	X	X
D9	The benefits arising from being part of the alliance have influence your company continuing membership of the alliance.	X	X	X
E1	Your airline has jointly developed a technological platform with your partners.	X	X	X
E2	The jointly developed technological platform allows communication between you and your alliance partners.	X	X	X
E3	Information concerning your partners' business operation is usually available as needed.	X	X	X
E5	Partners are authorized to access data created from joint activities.	X	X	X
F1	Partners often share their key knowledge and skills within the alliance.	X	X	X
F2	Your airline has provided several training programmes for your	X	X	X

	alliance partners.			
F3	Information of your airline is available to your alliance partners.	X	X	X
F4	Information of your alliance network is available to your alliance partners.	X	S	X
F5	Your airline provides your customer data to partner airlines.	X	X	X
F6	Your airline provides information on internal business operations and processes with partner airlines.	X	X	S
F7	Your airline provides records of business performance to partner airlines.	X	X	X
F8	Sharing idea with partners offering competing routes and services is discouraged.	X	X	X
F9	The information provided by your partners is clear and reliable.	X	X	X
F10	Strategic goals are shared between partners.	X	X	X

Note: Alliance Networks were used Kruskal-Wallis test, Managerial responsibility and office location were used Mann- Whitney test.

: S is indicated critically different average between the identified factors in each issue (Star Alliance-One World-Sky Team in Alliance Networks, management-operative levels in managerial responsibility, and town office-airport station in office locations).